

UNC-CH HEALTH SCIENCES LIBRARY



H00367668-

HEALTH SCIENCES LIBRARY
OF THE
UNIVERSITY OF NORTH CAROLINA



**This Book Must Not Be Taken
from the Division of Health
Affairs Buildings.**

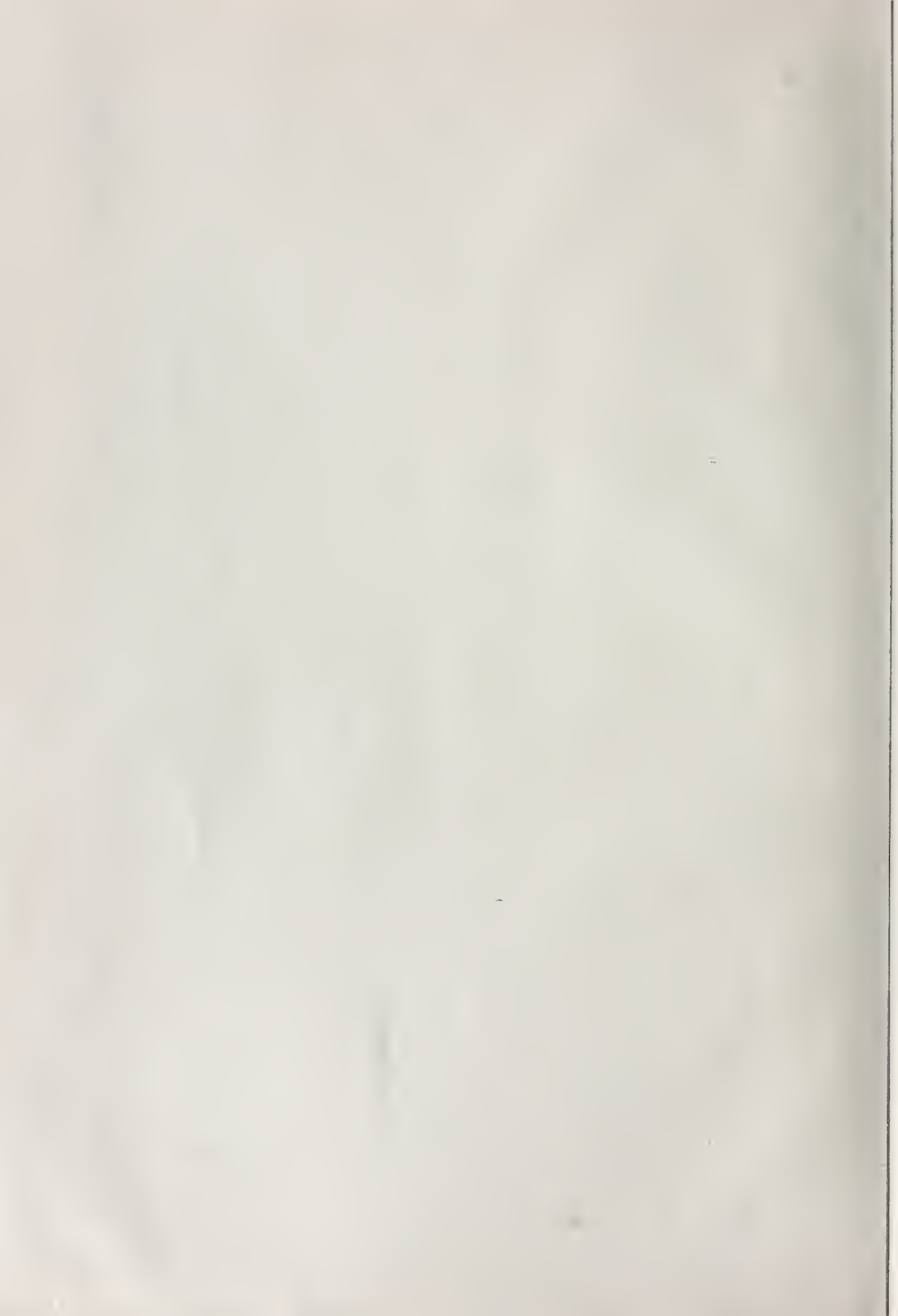
This JOURNAL may be kept out ~~TWO DAYS~~^{DAYS}
and is subject to a fine of FIVE CENTS a day
thereafter. It is DUE on the DAY indicated
below:

MAY

NOV 26 1961

FEB 26 1962

MAY 26 1962





NORTH CAROLINA MEDICAL JOURNAL

Owned and Published by

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Under the Direction of Its

EDITORIAL BOARD

ROBERT W. PRICHARD, M.D.
Winston-Salem, Editor

JOHN S. RHODES, M.D.
Raleigh, Associate Editor

MR. JAMES T. BARNES
Raleigh, Business Manager

WILLIAM M. NICHOLSON, M.D.
Durham, Chairman

WALTER SPAETH, M.D.
Elizabeth City

JOHN C. REECE, M.D.
Morganton

ROBERT A. ROSS, M.D.
Morganton

CHARLES W. STRYON, M.D.
Raleigh

MISS LOUISE MACMILLAN
Winston-Salem, Assistant Editor

Volume 28

JANUARY-DECEMBER, 1967

EDITORIAL OFFICE

300 South Hawthorne Road

Winston-Salem, N. C. 27103

Press of

Progress Printing Company, Inc.

220 Broad St.

Box 175

Fuquay-Varina, N. C. 27526



MEDICAL JOURNAL

PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

IN THIS ISSUE:

Educating Diabetics

W. MICHAEL BOLT, M.D., AND EMERY C. MILLER, JR., M.D.

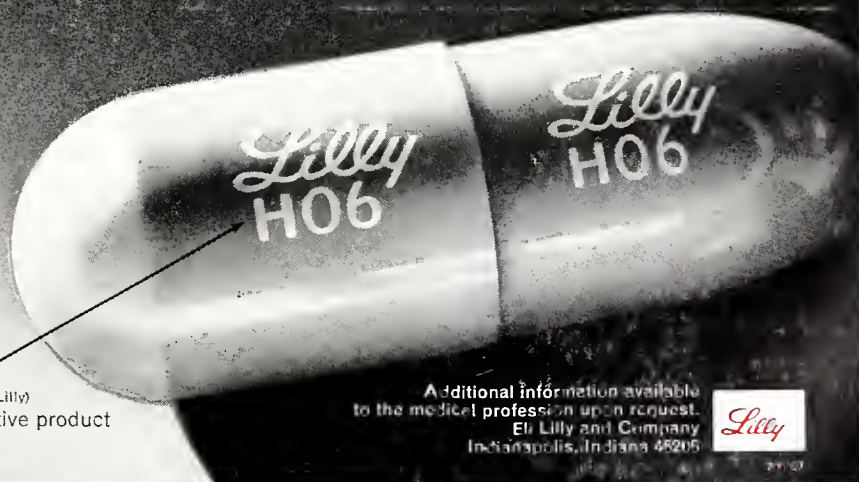
RECEIVED
FEB 1 1967

FEB 1 1967

DIVISION OF
HEALTH AFFAIRS LIBRARY

Something special Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride,
227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.



IDENTI-CODE™
(formula identification code, Lilly)
provides quick, positive product
identification.

Additional information available
to the medical profession upon request.
Eli Lilly and Company
Indianapolis, Indiana 46205



When the stagnant sinus must be drained...



Transillumination of the sinuses—diffuse shadow on right side of face indicates unilateral maxillary sinusitis.

In the common cold, Neo-Synephrine is unsurpassed for reducing nasal turgescence. It stops the stuffy feeling at once. It opens sinus ostia to re-establish drainage and lessen the chance of sinusitis. With Neo-Synephrine, in the concentrations most commonly used, decongestion lasts long enough for extended breathing comfort, without endangering delicate respiratory tissue. Systemic side effects are virtually unknown. There is little rebound tendency.

Neo-Synephrine[®] HCl

Brand of phenylephrine hydrochloride

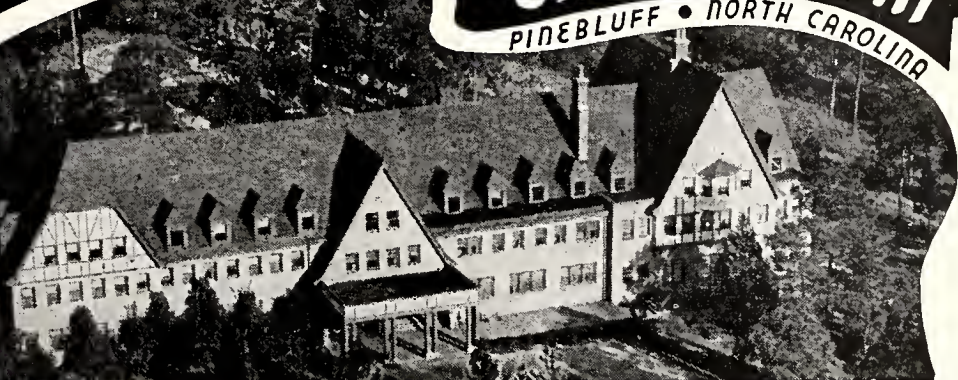
is available in a variety of forms,
for all ages:

- 1/8% solution for infants
- 1/4% solution for children and adults
- 1/4% pediatric nasal spray for children
- 1/2% solution for adults
- 1/2% nasal spray for adults
- 1/2% jelly for children and adults
- 1% solution for adults (resistant cases)

Also NTZ[®] Solution or Spray
Antihistamine-decongestant

THE PINEBLUFF SANITARIUM

PINEBLUFF • NORTH CAROLINA



A Sanitarium for Rest Under Medical Supervision, and Treatment of Nervous and Mental Diseases, Alcoholism and Drug Addiction

The Pinebluff Sanitarium is situated in the sandhills of North Carolina in a 60-acre park of longleaf pines. It is located on U. S. Route 1, six miles south of Pinehurst and Southern Pines. This section is unexcelled for its healthful climate.

Ample facilities are afforded for recreational and occupational therapy, particularly out-of-doors.

Special stress is laid on psychotherapy. An effort is made to help the patient arrive at an understanding of his problems and by adjustment to his personality difficulties or modification of personality traits to effect a cure or improvement in the disease. Two resident physicians and a limited number of patients afford individual treatment in each case.

For further information write:

The Pinebluff Sanitarium, Pinebluff, N. C.

Malcolm D. Kemp, M.D. Medical Director



Aerosol Therapy
with compressed air.



Aerosol — IPPB Therapy
with room air.



Aerosol — IPPB Therapy
with oxygen enriched air.

These Puritan-Bennett units can be prescribed for use at home or office

... as an aid in the treatment of pulmonary infection, pulmonary inflammation, inadequate ventilation, and to improve oxygenation.

In the acute or severe stages of disease, aerosolized medication and intermittent positive pressure breathing are administered as hospital procedure.

Puritan-Bennett aerosol and IPPB units are the pre-

ferred means of administration for home therapy. They're reliable, efficient, and simple for the inexperienced to use.

These units also lend themselves to the administration of inhalation therapy in your office. Ask our representative for more details and ask for your copy of "AEROSOL AND IPPB THERAPY."

Distributors of KNOWN BRANDS of PROVEN QUALITY

WINCHESTER

"CAROLINA'S HOUSE OF SERVICE"

Winchester Surgical Supply Company
200 South Torrence St., Charlotte, N. C.

Winchester-Ritch Surgical Company
421 West Smith St., Greensboro, N. C.

NORTH CAROLINA MEDICAL JOURNAL

Published Monthly as the Official Organ of

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

ROBERT W. PRICHARD, M.D., EDITOR

JOHN S. RHODES, M.D., ASSOCIATE EDITOR

VOLUME 28
NUMBER 1

JANUARY, 1967

\$5.00 A YEAR
\$1.00 A COPY

CONTENTS

ORIGINAL ARTICLES

- Education of the Diabetic Patient — Physician's Dilemma: Clinical Research in Patient Care—W. Michael Bolt, M.D., and Emery C. Miller, Jr., M.D. 1
- The Surgical Management of Empyema in Children —Frederick H. Taylor, M.D., and Hugh M. Foster, Jr., M.D. 7
- Rehabilitation of the Hemiplegic—James W. Gibson, M.D. 12
- Transient Rises in Ocular Pressure after Basal Iridectomy—James P. Gills, Jr., M.D. 17
- Ascariasis Complicating a Gunshot Wound: Case Report and Review of the Complications of Ascariasis—George Podgorny, M.D. 21
- Open Letter to the Nurses of Wake Memorial Hospital—Maxine Maurice, R.N. 24

EDITORIALS

- Suggestions for Authors 26
- The Boredom Factor in Exercise 27
- The Sobriety of Jews 27
- Some Good Effects of Bad Women 28

THE PRESIDENT'S MESSAGE

- The Appalachian Regional Program — Frank W. Jones, M.D. 29

COMMITTEES AND ORGANIZATIONS

- The Syphilis Control Program in North Carolina—Venereal Disease Control Section, Division of Epidemiology, North Carolina State Board of Health 32

BULLETIN BOARD

- Coming Meetings 33
- News Notes from the University of North Carolina School of Medicine 33
- News Notes from the Bowman Gray School of Medicine of Wake Forest College 35
- News Notes from the Duke University Medical Center 36
- North Carolina Health Council 38
- North Carolina Heart Association 38
- Announcements 38

THE MONTH IN WASHINGTON

39

CLASSIFIED ADVERTISEMENTS

40

Address manuscripts and communications regarding editorial matter to the NORTH CAROLINA MEDICAL JOURNAL, 300 South Hawthorne Road, Winston-Salem, N. C. 27103. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 203 Capital Club Building, Raleigh, N. C. 27602. All advertisements are accepted subject to the approval of a screening committee of the State Journal Advertising Bureau, 510 North Dearborn Street, Chicago, Illinois 60610, and/or by a Committee of the Editorial Board of the North Carolina Medical Journal in respect to strictly local advertising accepted for appearance in the North Carolina Medical Journal. Change of Address or Form 3579 to Publication Office: Progress Printing Co., Inc., Box 175, Fuquay-Varina, N. C. 27526. Subscription Rate: \$5.00 per year.

Second Class Postage Paid at Fuquay-Varina, N. C. 27526. Copyright 1967 by The Medical Society of the State of North Carolina.



raldrate



(SYRUP OF CHLORAL HYDRATE)



A palatable chloral hydrate syrup
containing 10 grains in each teaspoonful.

J. and V.

JONES and VAUGHAN
Richmond 26, Virginia

OFFICERS — 1966-1967

President: FRANK W. JONES, M.D., Rt. 3, Westlake Hills, Newton
President-Elect: ROBERT A. ROSS, M.D., N. C. Memorial Hospital, Chapel Hill
First Vice-President: DAVID G. WELTON, M.D., 1012 Kings Drive, Charlotte
Second Vice-President: DANIEL A. MCLAURIN, M.D., Box 36, Garner
Secretary: CHARLES W. STYRON, M.D., 615 St. Mary's Street, Raleigh
Speaker: DONALD B. KOONCE, M.D., 408 N. 11th Street, Wilmington
Vice-Speaker: ROBERT L. GARRARD, M.D., 800 N. Elm Street, Greensboro
Past President: GEORGE W. PASCHAL, JR., M.D., 1110 Wake Forest Rd., Raleigh
Executive Director: MR. JAMES T. BARNES, P. O. Box 790, Raleigh

COUNCILORS — 1964-1967

First District: WILLIAM H. ROMM, M.D., Box 26, Moyock
Vice Councilor: EDWARD G. BOND, M.D., Chowan Medical Center, Edenton
Second District: LYNWOOD E. WILLIAMS, M.D., Kinston Clinic, Kinston
Vice Councilor: ERNEST W. LARKIN, JR., M.D., 211 N. Market St., Washington
Third District: DEWEY H. BRIDGER, M.D., Bladenboro
Vice Councilor: FRANK R. REYNOLDS, M.D., 1613 Dock St., Wilmington
Fourth District: EDGAR T. BEDDINGFIELD, JR., M.D., Community Clinic, Stantonsburg
Vice Councilor: HARRY H. WEATHERS, M.D., Central Medical Clinic, Roanoke Rapids
Fifth District: HARRY H. SUMMERLIN, M.D., 203 Atkinson St., Laurinburg
Vice Councilor: CHARLES A. SPEAS PHILLIPS, M.D., Pinehurst Surgical Clinic, Pinehurst
Sixth District: JOHN GLASSON, M.D., 306 S. Gregson Street, Durham
Vice Councilor: FRED G. PATTERSON, M.D., 1001 S. Hamilton Rd., Chapel Hill
Seventh District: CHARLES L. STUCKEY, M.D., 1515 Elizabeth Ave., Charlotte
Vice Councilor: JESSE CALDWELL, JR., M.D., 114 West Third Ave., Gastonia
Eighth District: LOUIS DES. SHAFFNER, M.D., 300 S. Hawthorne Rd., Winston-Salem
Vice Councilor: CLAUDE A. MCNEILL, JR., M.D., 121 Church Street, Elkin
Ninth District: THOMAS L. MURPHY, M.D., 116 Rutherford St., Salisbury
Vice Councilor: PAUL MCN. DEATON, M.D., 766 Hartness Rd., Statesville
Tenth District: JAMES S. RAPER, M.D., 103 Doctors Bldg., Asheville
Vice Councilor: ERNEST H. STINES, M.D., Midway Medical Center, Canton

SECTION CHAIRMEN — 1966-1967

General Practice of Medicine: JOHN K. WILLIFORD, M.D., 900 9th St., Lillington
Internal Medicine: BARRY F. HAWKINS, M.D., 56 Ardsley Ave., N.E., Concord
Ophthalmology & Otolaryngology: RICHARD B. RANKIN, JR., M.D., Box 3295, Concord
Surgery: PATRICK F. CLARK, M.D., 401 Doctors Bldg., Asheville
Pediatrics: WILLIAM J. DEMARIA, M.D., Duke Hospital, Durham
Obstetrics & Gynecology: JOHN H. MONROE, M.D., 415 N. Spring St., Winston-Salem
Public Health & Education: SARAH T. MORROW, M.D., Guilford Co. Health Dept., Greensboro
Neurology & Psychiatry: ROBERT N. HARPER, M.D., 2109 Clark Ave., Raleigh
Radiology: LESLIE M. MORRIS, M.D., Medical Bldg., Gastonia
Pathology: A. WENDELL MUSSER, M.D., Duke University, Durham
Anesthesiology: THOMAS H. COLLAWN, M.D., Presbyterian Hosp., Charlotte
Orthopaedics & Traumatology: J. FRANK HAMILTON, JR., M.D., 283 Biltmore Ave., Asheville
Student AMA Chapters: MT. JOEL E. ROTKERMEL, 2 By-Pass, Chapel Hill 27514

New from Du Pont

Symmetrel[®]

(Amantadine HCl)

the first oral chemical virostat for the prevention of influenza A₂



Influenza virus

*Protein shell enclosing
the core of nucleic
acid (RNA)—artist's
representation*

The incidence of influenza A₂. In this country, where influenza is one of the leading causes of morbidity, influenza A₂ (Asian) continues to be a serious medical problem. In 1957 influenza A₂ was responsible for approximately 40,000 excess deaths in a three-month period. Since that year the most prevalent influenza virus has been A₂ (Asian).

What is Symmetrel[®]? "Symmetrel" (amantadine HCl) is a new synthetic chemical which acts as a molecular barrier to virus penetration. It provides for the first time specific oral medication for the prevention of respiratory infections caused by influenza A₂ (Asian) viruses—an entirely new approach in preventive medicine.

For prescribing information, see last page of this presentation

What Symmetrel® (amantadine HCl) means to you

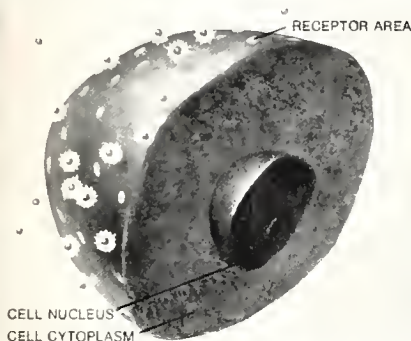
- ...the first and only oral chemical agent to prevent influenza A₂ (Asian).
- ...not a vaccine or antibiotic, but a new synthetic chemical unrelated to any other chemotherapeutic agent.
- ...unique mode of action: prevents virus penetration of the host cell without affecting vital cell functions.
- ...specifically active against all influenza A₂ viruses tested to date.
- ...not indicated for the prevention of influenzal or respiratory illness other than influenza A₂ or for the treatment of established disease.
- ...does not interfere with normal antibody response; acts in concert with pre-existing antibody.

What Symmetrel® means to your patient

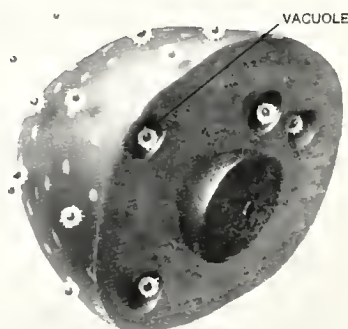
- ...possible immediate influenza A₂ protection when taken following suspected contact.
- ...may be particularly useful during outbreaks or epidemics and for high-risk patients in whom the occurrence of influenza A₂ is especially hazardous.
- ...a high degree of safety in clinical use.
- ...simple once daily or b.i.d. dosage.

The mode of action of Symmetrel®

How the influenza virus invades and destroys the untreated cell



- 1** Viruses outside the cell attach themselves to specific cell receptor areas

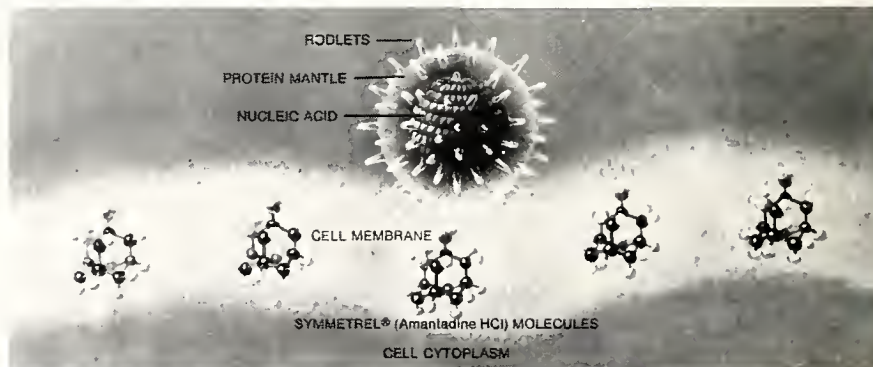
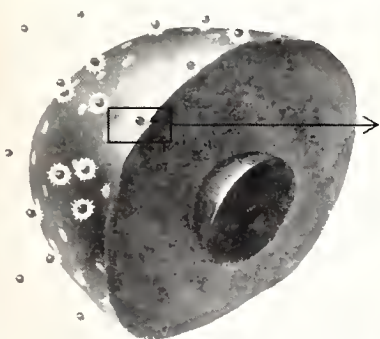


- 2** The virus is incorporated into a vacuole within the cell. From this vacuole the virus nucleic acid passes into the cell cytoplasm



- 3** The virus nucleic acid then directs the cell to produce both new virus nucleic acid and virus protein coat material which aggregate to form new virus particles. This process leads to the release of new virus particles and eventual destruction of the cell

How Symmetrel® (Amantadine HCl) prevents virus invasion¹



Our current knowledge leads us to believe "Symmetrel" acts as a molecular barrier to influenza virus penetration. Shown here in a greatly enlarged section, "Symmetrel"—located at the cellular membrane—effectively prevents (blocks) virus penetration. Thus, "Symmetrel" does not directly destroy the virus particle but acting as a virostat prevents the cycle of virus penetration, virus replication, and cell destruction that is characteristic of virus invasion of animal cells (tissue). *Artist's conception based on current scientific knowledge.*

¹ "Mode of Action of the Antiviral Activity of Amantadine in Tissue Culture", Hoffmann, C. E.; Neumayer, E. M.; Haff, R. F.; and Goldsby, R. A., *Journal of Bacteriology* 90,623 (1965).

Safety of Symmetrel® Confirmed. When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Prescribing Information

Indications: "Symmetrel" is indicated for the prevention (prophylaxis) of influenza A₂ in persons of all age groups. Early use is recommended, preferably before, as soon as possible after actual or suspected contact with individuals suffering from influenza A₂. "Symmetrel" should especially be considered for high influenza-risk patient groups such as those suffering from chronic debilitating diseases and elderly persons.

Contraindications: Not indicated for the prevention of influenzal or respiratory illness other than influenza A₂ or for the treatment of established disease.

Warnings: Administration to patients with central nervous system disease, particularly geriatric patients with cerebral arteriosclerosis, and patients with a history of epilepsy or other "seizures," requires strict observation for possible untoward effects (see Adverse Reactions). Patients taking psychopharmacologic drugs, central nervous system stimulants, or alcoholic beverages should be observed for possible evidence of intolerance. Those patients who experience central nervous system effects or blurring of vision should be cautioned against driving or working in situations where alertness is important.

No teratogenic effects have been seen in reproductive studies in rats and rabbits. Studies in pregnant women have, however, not been done and use of this drug in women of childbearing age should be undertaken only after weighing the possible risks to the fetus against benefit to the pregnant patient. It should not be administered to nursing mothers since it is not known whether the drug is secreted in the milk.

Precautions: Ineffective against bacterial infections. Patients should be observed for idiosyncratic reactions as with all new drugs. Geriatric patients with pre-existing serious medical illnesses with mental or physical deterioration should be followed carefully medically while taking "Symmetrel." (See Adverse Reactions.)

Adverse Reactions: With higher than indicated doses manifestations of central nervous system effects such

as nervousness, insomnia, dizziness, lightheadedness, drunken feeling, slurred speech, ataxia, inability to concentrate and some psychic reactions including depression and feelings of detachment were seen. Occasional blurred vision was reported at higher doses. Some of the milder and less pronounced symptoms above have been reported in a small number of patients taking the recommended dosage of 200 mg per day. Those were mostly transient and disappeared with continued administration of the drug. Some geriatric patients developed paranoid or hallucinatory behavior and became unmanageable while taking 200 mg daily. Medically unselected seriously deteriorated geriatric patients showed poor clinical tolerance after several weeks of daily dosing with 200 mg per day. One elderly patient with a history of prior cerebrovascular accident developed visual hallucinations and grand-mal convulsions while on drug at 800 mg per day. Some cases of dry mouth, gastrointestinal upset and skin rash and rarely, tremors, anorexia, pollakiuria, and nocturia have been also reported.

Safety: When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Dosage: *Adults:* Two 100 mg capsules (or 4 teaspoonfuls of syrup) as a single daily dose or the daily dose may be divided into one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

Children: 1 yr.—9 yrs. of age: Calculate total daily dose on the basis of 2 mg to 4 mg per pound of body weight per day (but not to exceed 150 mg per day). Daily dose, given as the syrup, should be given in 2 or 3 equal portions.

9 yrs.—12 yrs. of age: Total daily dose 200 mg given as one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

How Supplied: *Capsules:* Bottles of 100. Each red, gelatin capsule contains 100 mg amantadine HCl.

Syrup: Bottles of 1 pint. Each 5 ml (1 teaspoonful) contains 50 mg amantadine HCl.



Symmetrel®

(Amantadine HCl)

A molecular barrier to virus penetration

arrest diarrhea

in • gastroenteritis • acute infections



LOMOTIL[®]

Each tablet and each 5 cc. of liquid contains:

diphenoxylate hydrochloride 2.5 mg.

(Warning: May be habit forming)

atropine sulfate 0.025 mg.

Effectiveness: Lomotil possesses a unique degree of effectiveness in both acute and chronic diarrhea.

Convenience: Lomotil is supplied as small, easily carried, easily swallowed tablets and as a pleasant, fruit-flavored liquid.

Versatility: The therapeutic efficiency, safety and convenience of Lomotil may be used to advantage alone or as adjunctive therapy in diarrhea associated with:

- Ulcerative colitis
- Acute infections
- Irritable bowel
- Regional enteritis
- Drug therapy
- Food Poisoning
- Functional hypermotility
- Malabsorption syndrome
- Ileostomy
- Gastroenteritis and colitis

Dosage: For correct therapeutic effect—Rx correct therapeutic dosage. The recommended initial daily dosages, given in divided doses, until diarrhea is controlled, are:

Children: Age	Total Daily Lomotil Dosage	Lomotil Liquid Dosage (Each teaspoonful [4 cc.] contains 2 mg. of diphenoxylate HCl)
3-6 months	3 mg. 	½ tsp. 3 times daily
6-12 months	4 mg. 	½ tsp. 4 times daily
1-2 years . . .	5 mg. 	½ tsp. 5 times daily
2-5 years . . .	6 mg. 	1 tsp. 3 times daily
5-8 years . . .	8 mg. 	1 tsp. 4 times daily
8-12 years	10 mg. 	1 tsp. 5 times daily

Adults: 20 mg. (2 tsp. 5 times daily or 2 tablets 4 times daily) Based on 4 cc. per teaspoonful. Maintenance dosage may be as low as one-fourth the initial daily dose.

Precautions: Lomotil, brand of diphenoxylate hydrochloride with atropine sulfate, is a Federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded. Lomotil should be kept out of reach of children since accidental overdosage may cause severe respiratory depression. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates. The subtherapeutic amount of atropine is added to discourage deliberate overdosage.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

SEARLE

Research in the Service of Medicine



W
W
D
DE
S

300
ml

Effective
any, ur
the acut
ems are
contrain
antortet
Warning
excessive
such con
end, if th
may be a
antifolial
drug and
sunburn
severe sk
allergic
avoid dir
the first
Precauti
table orga

LEDER

Why wonder about a drug

when you know

DECLOMYCIN[®]

DEMETHYLCHLORTETRACYCLINE

is effective b.i.d.



It's made for b.i.d.

Effective in a wide range of everyday infections—respiratory, urinary tract and others—in the young and aged—the acutely or chronically ill—when the offending organisms are tetracycline-sensitive.

Contraindication—History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive systemic accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort.

Precautions and Side Effects—Overgrowth of nonsusceptible organisms may occur. Constant observation is essen-

tial. If new infections appear, appropriate measures should be taken. Use of demethylchlortetracycline during tooth development (last trimester of pregnancy, neonatal period and early childhood) may cause discoloration of the teeth (yellow-grey-brownish). This effect occurs mostly during long-term use but has also been observed in short treatment courses. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment. Side reactions include glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis and dermatitis. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Anaphylactoid reactions have been reported.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products.

Capsules: 150 mg; **Tablets:** film coated, 300 mg, 150 mg, and 75 mg of demethylchlortetracycline HCl.

for noses of every description,
one safe and sure prescription:

Otrivin®
(xylometazoline CIBA)
on Rx only



- quickly relieves congested nose
- action is gentle, yet prolonged
- side effects are minimal

INDICATION: Nasal congestion. **CONTRAINDICATION:** Do not use in patients sensitive to small doses of sympathomimetic substances. **WARNINGS:** Prolonged or excessive use may cause rebound congestion. Use cautiously in patients with hyperthyroidism, coronary artery disease, hypertension, and diabetes. **CAUTION:** Do not shake Nasal Spray. Rinse Nasal Solution dropper or Nasal Spray tip in hot water after each use. No more than one person should use the same dropper bottle or nasal spray.

SIDE EFFECTS: Occasional local reactions: rebound congestion, slight burning or stinging, sneezing, dry nose. Occasional systemic effects: headache, drowsiness, lightheadedness, insomnia, palpitations. Overdosage in young children may produce profound sedation. **DOSAGE:** Adults: *Nasal Solution*—2 or 3 drops in each nostril every 4 to 6 hours. *Nasal Spray*—Squeeze rapidly once or twice in each nostril every 4 to 6 hours. **Children under 12:** *Pediatric Nasal Solution*—2 or 3 drops in each nostril every 4 to 6 hours. One drop should be used

in infants under 6 months. *Pediatric Nasal Spray*—Squeeze rapidly once in each nostril holding tube upright; repeat every 4 hours as necessary. **SUPPLIED:** OTRIVIN® hydrochloride (xylometazoline hydrochloride CIBA) *Nasal Solution*, 0.1%; dropper bottles of 1 fluidounce, bottles of 1 pint. *Nasal Spray*, 0.1%; plastic squeeze tubes of 15 ml. *Pediatric Nasal Solution*, 0.05%; dropper bottles of 1 fluidounce. *Pediatric Nasal Spray*, 0.05%; plastic squeeze tubes of 15 ml. *Nasal Solutions* contain either 0.1% or 0.05% xylometazoline hydrochloride, triethanolamine, hydrochloric acid, sodium chloride, and phenylmercuric acetate 1:50,000 as preservative in water. *Nasal Sprays* contain either 0.1% or 0.05% xylometazoline hydrochloride, potassium phosphate monobasic, potassium chloride, sodium phosphate dibasic, sodium chloride, and benzalkonium chloride 1:5000 as preservative in water. Consult complete literature before prescribing.

CIBA Pharmaceutical Company, Summit, N. J.

CIBA

SAINT ALBANS

PSYCHIATRIC HOSPITAL

(A Non-Profit Organization)

Radford, Virginia

Telephone: 639-2482

STAFF

James P. King, M.D., Director

William D. Keck, M.D.

Clinical Director

James K. Marrow, M.D.

Morgan E. Scott, M.D.

Clinical Psychology:

Thomas C. Camp, Ph.D.

Card McGraw, Ph.D.

David L. Strahley, Ph.D.

Edward E. Cole, Jr., M.D.

J. William Giesen, M.D.

Internist

Dan Phillips

Administrator

R. Lindsay Shuff, M.H.A.

Asst. Administrator

AFFILIATED CLINICS

Bluefield Mental Health Center

525 Bland St., Bluefield, W. Va.

David M. Wayne, M.D.

Phone: 325-9159

Charleston Mental Health Center

1206 Quarrier Street, Charleston, W. Va.

Malcolm G. MacAulay, M.D.

Phone: 344-3578

Beckley Mental Health Center

109 E. Main Street, Beckley, W. Va.

W. E. Wilkinson, M.D.

Phone: 253-8397

Mental Health Clinic

Professional Building, Wise, Va.

Pierce D. Nelson, M.D.

Phone: 328-2211

Rx

... for a
healthy
CREDIT
POLICY

IF you are a physician, dentist, hospital administrator or clinic manager—

AND if you find yourself over-burdened with credit and collection problems—

THEN you're ready for a professional consultation. Whether you were trained to treat patients, run a hospital or manage a clinic, regular consultations with specialists in fields other than your own are probably a part of your routine.

If you haven't already done so, the professionally-trained specialist you should consult is your local Medical Credits representative. For his name and address, write:

Associated Credit Bureaus of N. C.

P. O. Box

300



Greensboro,

North Carolina

Medical Society Of The State Of North Carolina

Major Hospital and Overhead Expense Plans

\$10,000 Major Hospital Policy - 80%-20% Co-insurance

PLAN A—\$100 DEDUCTIBLE

Age	Member	Member and Spouse	Member, Spouse and Children
Under 40	\$ 31.50	\$ 79.00	\$110.50
40 - 49	48.00	116.50	148.00
50 - 59	70.00	160.50	192.00
60 - 64*	110.00	246.00	277.50

PLAN B—\$300 DEDUCTIBLE

Age	Member	Member and Spouse	Member, Spouse and Children
Under 40	\$ 19.00	\$ 43.50	\$ 57.50
40 - 49	29.00	67.50	81.50
50 - 59	45.50	97.50	111.50
60 - 64*	69.00	154.50	168.50

PLAN C—\$500 DEDUCTIBLE

Age	Member	Member and Spouse	Member, Spouse and Children
Under 40	\$ 12.00	\$ 26.50	\$ 35.00
40 - 49	19.50	45.50	54.00
50 - 59	31.50	70.00	78.50
60 - 64*	53.00	118.50	127.00
65 - 69	22.00	65.00	73.50

*Renewal rates only—When an Insured Member attains Age 65 he may continue to be insured under the \$500 Deductible Plan which is integrated with Medicare.

Overhead Expense Policy

**BENEFITS PAYABLE FROM THE 1ST DAY OF DISABILITY
PROVIDED DISABILITY IS TOTAL AND
CONTINUOUS FOR 31 DAYS**

Monthly Expense Benefit	Under Age 40 Annual Premium	Ages 40-49 Annual Premium	Ages 50-59 Annual Premium	Ages 60-69* Annual Premium
\$ 200	\$ 28.00	\$ 34.00	\$ 40.00	\$ 64.00
500	70.00	85.00	100.00	160.00
600	84.00	102.00	120.00	192.00
700	98.00	119.00	140.00	224.00
800	112.00	136.00	160.00	256.00
900	126.00	153.00	180.00	288.00
1,000	140.00	170.00	200.00	320.00

*Renewal only. Premiums apply at age of entry and at attained age on renewal.
Semi-annual premium rates are one-half the annual rate plus fifty cents.

For Full Information—Write or Call

Ralph J. Golden Insurance Agency

Ralph J. Golden • Henry MacIin IV • J. M. Moore

Phone: BRoadway 5-3400

Greensboro, N. C. 27405



Photo professionally posed

Mike expects a penicillin injection. He's about to be pleasantly surprised.

His physician is going to prescribe an oral penicillin — **PEN • VEE® K** (potassium phenoxymethyl penicillin). It's usually so rapidly and completely absorbed that therapeutic serum levels are produced in 15 to 30 minutes. Higher serum levels generally last longer than with oral penicillin G.

Indications: Infections due to pathogens susceptible to oral penicillin G. Prophylaxis of rheumatic fever in patients with previous history of the disease.

Precautions: Skin rash, symptoms resembling those of serum sickness, or other manifestations of penicillin-allergy may occur. Measures for treating anaphylaxis should be readily available: epinephrine, oxygen and pressor drugs for relief of immediate allergic reactions; anti-

histamines and corticosteroids for delayed effects. Penicillin may delay or prevent the appearance of primary syphilitic lesions. Patients with gonorrhea who are suspected of concurrent syphilitic infections should be tested serologically for at least 3 months. Where lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. As with other antibiotics overgrowth of nonsusceptible organisms may occur; if so, discontinue and take appropriate measures. Treat β -hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent development of rheumatic fever or glomerulonephritis.

Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.

Composition: Tablets—125 mg. (200,000 units) and 250 mg., (400,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

Wyeth Laboratories Philadelphia, Pa.

ORAL **PEN • VEE® K**
(potassium phenoxymethyl penicillin) 

When
thiazide
or
reserpine
alone
won't
keep

**BLOOD
PRESSURE
DOWN**

Establish and maintain early, more decisive control of blood pressure

DIUTENSEN-R®

Cryptenamine 1.0 mg.* Methyclothiazide 2.5 mg. Reserpine 0.1 mg.

When blood pressure won't stay down despite initial therapy — when complaints of headache, fatigue or dizziness are often voiced — it may be time for a change to DIUTENSEN-R.

DIUTENSEN-R is thiazide and reserpine *plus* cryptenamine — a rational, comprehensive therapy to help establish and maintain early, more decisive control of blood pressure.

The cryptenamine in DIUTENSEN-R helps improve normal vasodilating reflexes while the thiazide and reserpine components maintain vasorelaxant, sedative, and saluretic benefits. Cryptenamine lowers pressoreceptor reflex thresholds (which may be abnormally high in hypertension) — “resets” pressoreceptors to function at more nearly normotensive levels.

Early, more decisive control with DIUTENSEN-R helps secure continuing benefits — may reduce or even obviate the need for poorly tolerated drugs later in therapy.

“...quite apart from the problem of vascular damage, there arises a possibility of virtual ‘cure’ or remission of hypertension when treatment is early, i.e., before too many other secondary pressor systems have entered into the disequilibrium of pressor control, and when it is adequately suppressive.”

Corcoran, A. C.: The choice of drugs in the treatment of hypertension. In: *Drugs of Choice* 1966-67, W. Modell, Ed., St. Louis, C. V. Mosby Company, 1966, p. 417.

Indications: DIUTENSEN-R may be employed in all grades of essential hypertension.

Dosages: Usual dose is 1 tablet twice daily, at morning and evening meals.

However, adjustment of dosage to suit individual circumstances may be required. Please refer to package insert for full particulars. **Side effects and**

precautions: The side effects observed with patients on DIUTENSEN-R have been of a mild and nonlimiting nature. These include occasional urinary frequency, nocturia, nasal congestion, muscle cramps, skin rash, joint pains due to gout symptoms and nausea and dizziness which have been reported for the individual components. Most of these symptoms disappear while the drug is continued at the same or lower dosage level. The concomitant use of digitalis and DIUTENSEN-R may increase the possibility of digitalis-like intoxication. If there is evidence of myocardial irritability (extrasystoles, bigeminy or AV block), dosage of DIUTENSEN-R should be reduced or discontinued. Nocturia in patients with marginal cardiac status and salt and fluid retention can be effectively controlled by limiting the time of administration to early afternoon. DIUTENSEN-R should not be used in patients with a known intolerance to reserpine. Package inserts furnish a complete summary of recommended cautions related to each of the ingredients of DIUTENSEN-R.

*As tannate salts equivalent to 130 Carotid Sinus Reflex Units.

NEISLER



NEISLER LABORATORIES, INC. • DECATUR, ILLINOIS
SUBSIDIARY OF UNION CARBIDE CORPORATION

to help restore
and stabilize the
intestinal flora

LACTINEX[®]

TABLETS & GRANULES

for fever blisters
and canker sores
of herpetic origin

LACTINEX contains a standardized viable mixed culture of *Lactobacillus acidophilus* and *L. bulgaricus* with the naturally occurring metabolic products produced by these organisms.

LACTINEX was introduced to help restore the flora of the intestinal tract in infants and adults.^{1,2,3,4}

LACTINEX has also been shown to be useful in the treatment of fever blisters and canker sores of herpetic origin.^{5,6,7,8}

No untoward side effects have been reported to date.

Literature on indications and dosage available on request.

**HYNSON, WESTCOTT
& DUNNING, INC.**

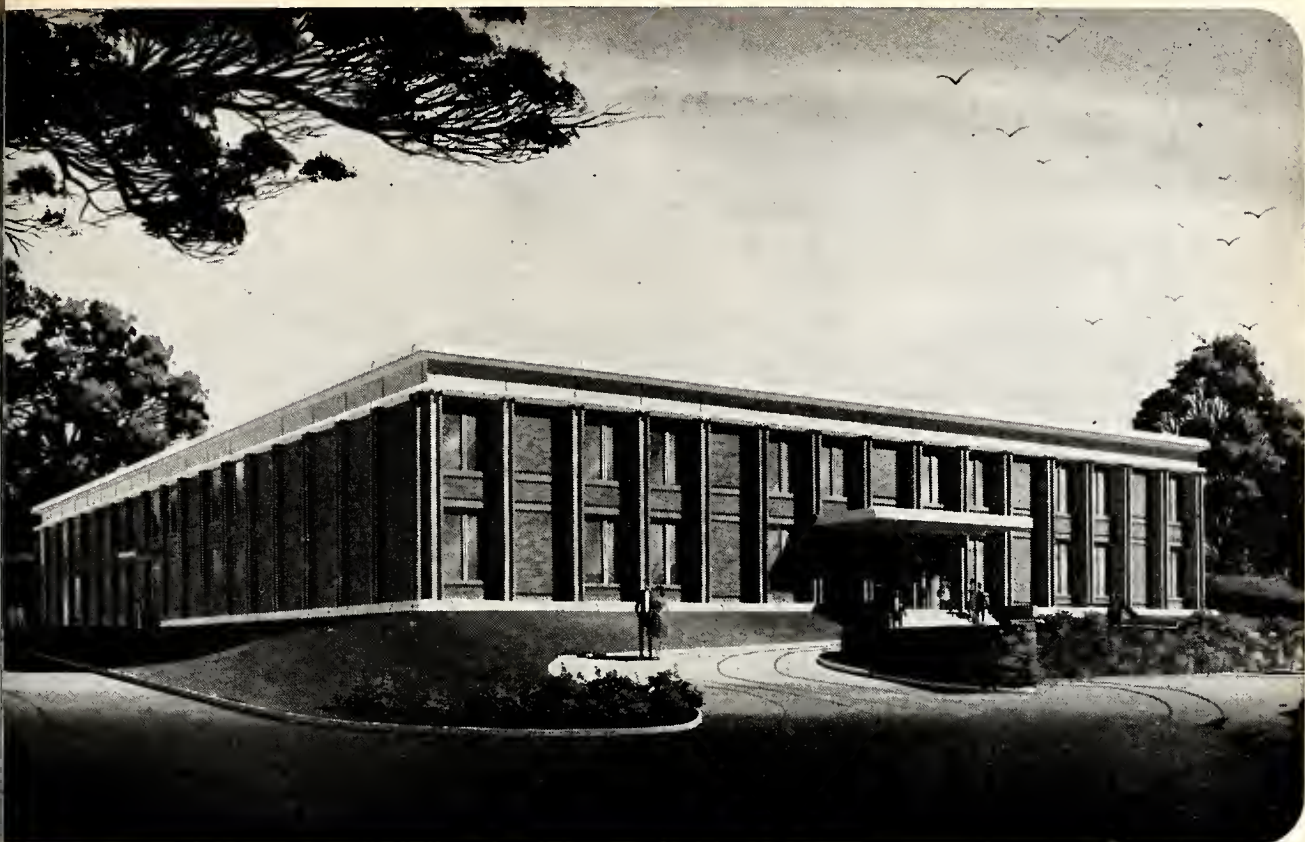


BALTIMORE, MARYLAND 21201

References: (1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., 15:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., 58:2672-2673,

August 1958. (6) Weekes, D. J.: EENT Digest, 25:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., 20:591-593, November 1965.

LX



New, Long-term Psychiatric Facility

The new forty bed Parkwood Hospital specializes in long-term treatment of the mentally ill. Under the direction of a Medical Director, the hospital facilities are available to over thirty psychiatrists who are on its staff. Parkwood provides a full complement of exceptional facilities including X-ray, laboratory, pharmacy, occupational and music therapy, patient beauty parlor and an outdoor recreational area. □ Special efforts were made to combine maximum patient comfort with a warm, secure, residential atmosphere readily conducive to psychotherapy. □ We will be pleased to provide further information upon request.

PARKWOOD HOSPITAL

1999 Cliff Valley Way, N.E. / Atlanta, Georgia 30329 / Phone 634-5166 (404)

Night Leg Cramps...Frequent Bedfellow In Diabetes,¹ Arthritis,² and Peripheral Vascular Disorders²



now...specific therapy for night leg cramps

QUINAMMTM

Consistently effective, QUINAMM provided complete relief in 94% of 200 patients studied, many of whom were severe cases refractory to other medication.³ Your prescription for one tablet at bedtime often controls painful night cramps with the initial dose . . . helps restore restful sleep.

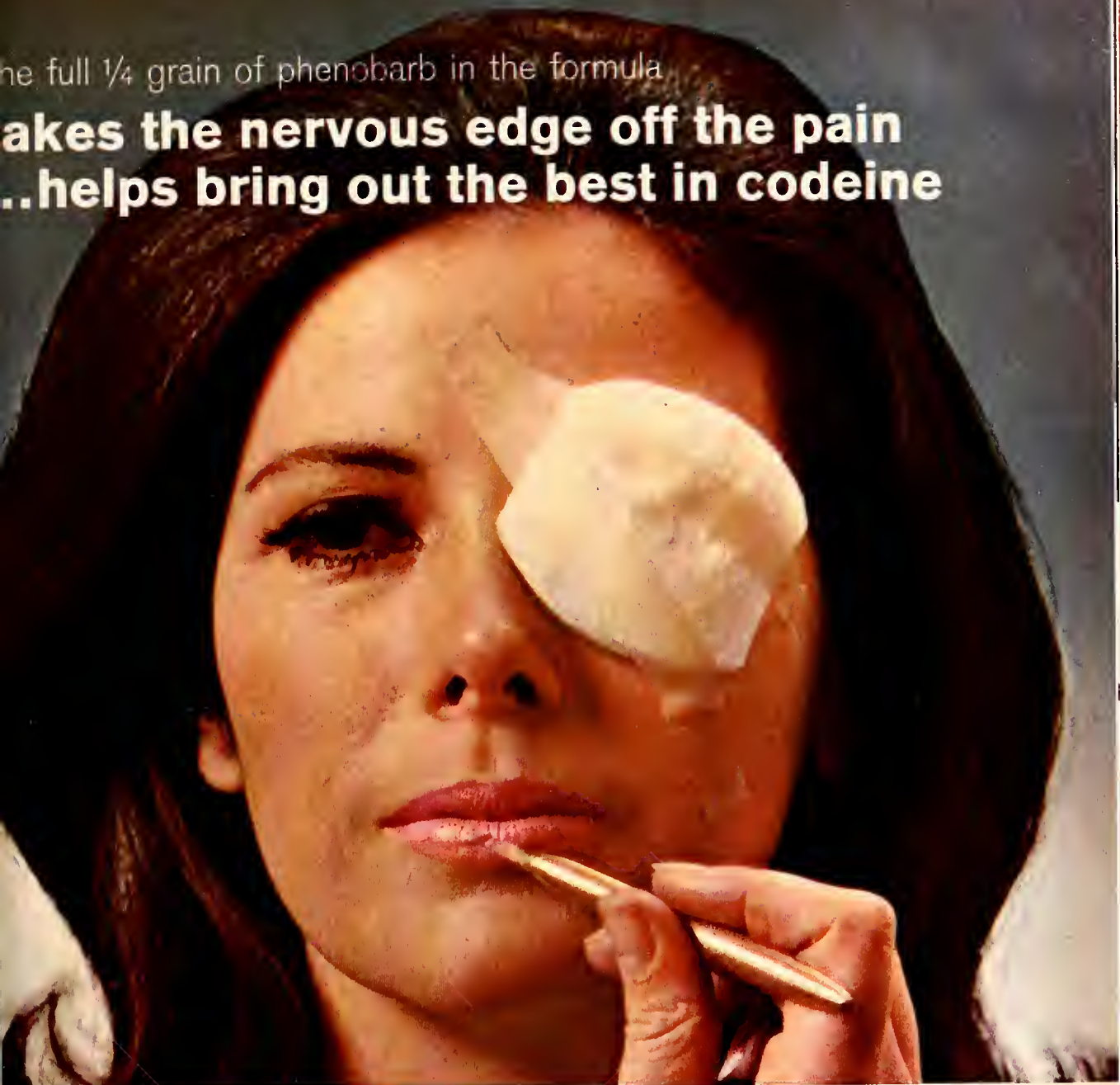
WALKER
Laboratories

QUINAMM Prescribing Information: **Composition:** Each white, beveled, compressed tablet contains: Quinine Sulfate 4 grains (250 mg.) and Aminophylline 3 grains (200 mg.). **Precautions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Contraindication:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets. **Caution:** Federal law prohibits dispensing without prescription.

References: 1. Shuman, C.: *Am. J. Med. Sci.*, 225:54, 1953. 2. Perchuk, E., et al.: *Angiology*, 12:102, 1961. 3. Rawls, W., et al.: *Med. Times*, 87:818, 1959.

Division of Richardson-Merrell Inc., Mount Vernon, New York 10551

the full 1/4 grain of phenobarb in the formula
makes the nervous edge off the pain
...helps bring out the best in codeine



Phenaphen[®] with Codeine

the only leading compound
analgesic that **calms**
instead of caffeinates

Each capsule contains:

phenobarbital (1/4 gr.) 16.2 mg.
(Warning: may be habit forming)
aspirin (2 1/2 gr.) 162.0 mg.
phenacetin (3 gr.) 194.0 mg.
pyoscyamine sulfate 0.031 mg.
codeine phosphate 1/4 gr. (No. 2),
1/2 gr. (No. 3), 1 gr. (No. 4)
(Warning: may be habit forming)

Contraindications: Hypersensitivity to any ingredient.

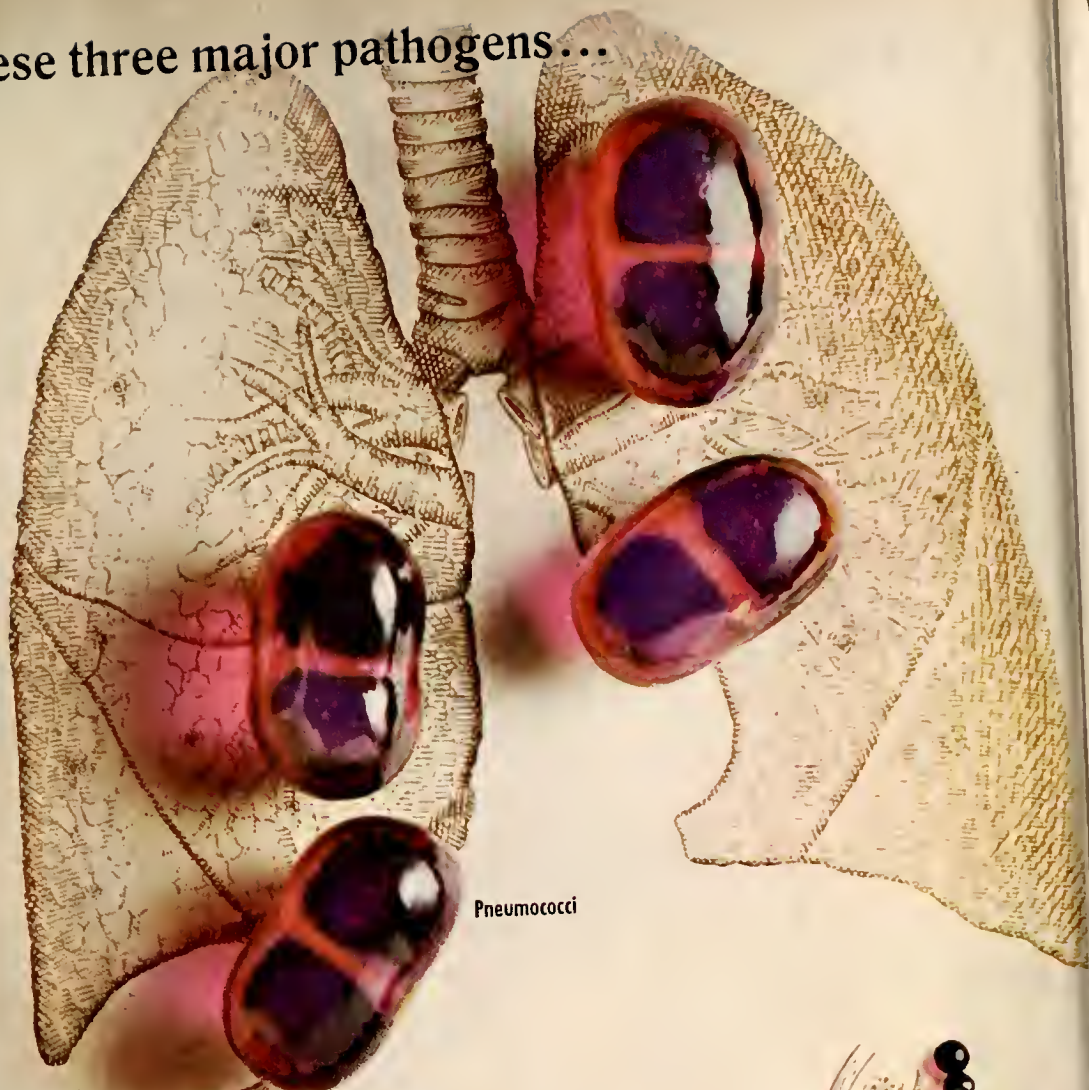
Precautions: As with all phenacetin-containing products, avoid excessive or prolonged use.

Side Effects: Side effects are uncommon—nausea, constipation, and drowsiness have been reported.

A-H-ROBINS

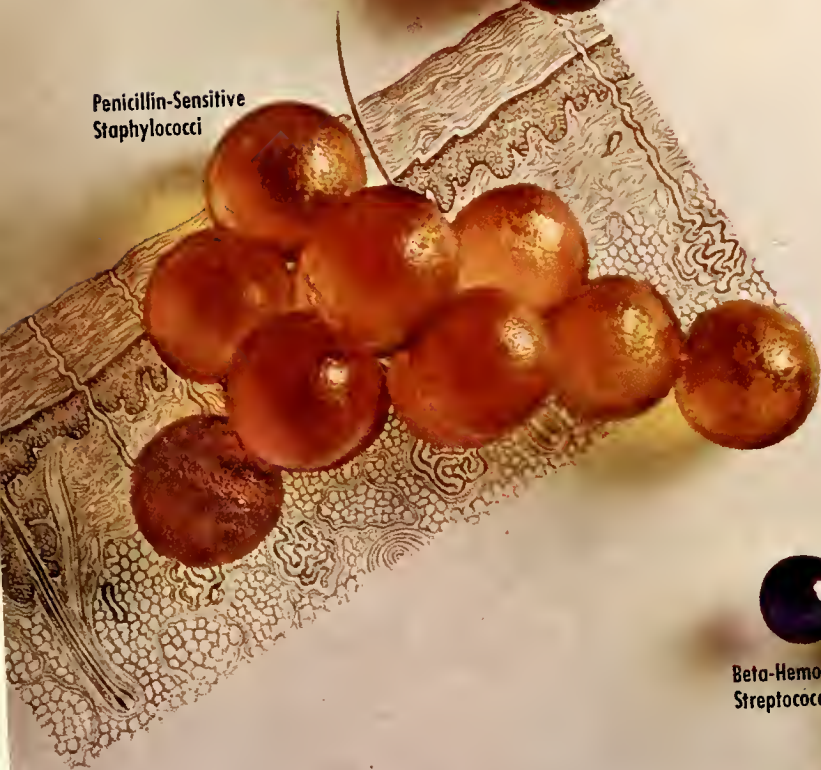
A. H. ROBINS CO., INC., Richmond, Va. 23220

Against these three major pathogens...



Pneumococci

Penicillin-Sensitive
Staphylococci



Beta-Hemolytic
Streptococci



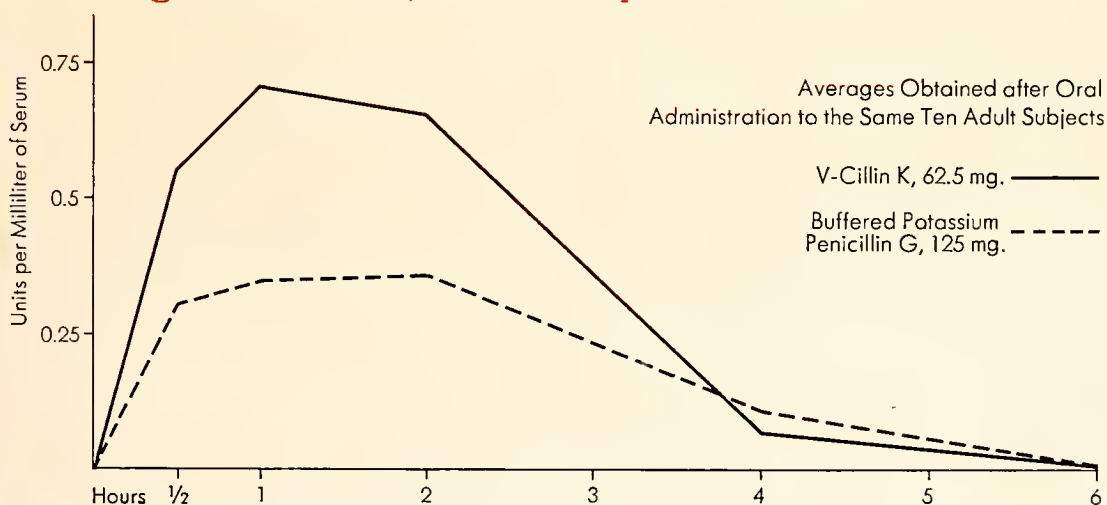
V-Cillin K[®] provides unexcelled oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive)		Streptococcus, Group A		Diplococcus Pneumoniae	
	Median MIC (mcg./ml.)	Range	Median MIC (mcg./ml.)	Range	Median MIC (mcg./ml.)	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med., 269 1019, 1963.

with high blood levels, even in the presence of food



Adopted from Griffith, R. S., and Block, H. R.: Current Ther. Res., 6 253, 1964.

V-Cillin K[®]  700157
Potassium Phenoxyethyl Penicillin

(See next page for prescribing information)

New 500 mg. tablets... a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy. Reactions occur more frequently in individuals with bronchial asthma or other allergies or in

those who have previously demonstrated sensitivity to penicillin; hypersensitivity reactions occur, the drug should be discontinued.

Adverse Reactions: Although serious allergic reactions are much less common with administration of oral penicillin than with intramuscular forms, skin rash, symptoms resembling those of serum sickness, and other manifestations of penicillin allergy may occur. When penicillin is administered, measures for treating anaphylaxis should be readily available. These include epinephrine, oxygen, and pressor drugs; relief of immediate allergic manifestations as well as antihistamines and corticosteroids for delayed effects.

The use of antimicrobial agents may be associated with the overgrowth of antibiotic-resistant organisms; in such a case, antibiotic administration should be stopped and appropriate measures taken.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K, Pediatric, the usual dosage ranges from 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, the daily dosage may be 50 mg. per Kg. of body weight divided into three doses.

Beta-hemolytic streptococcus infections without associated bacteremia may be treated with 200,000 to 400,000 units three times a day. Therapy should be continued for a minimum of ten days to prevent development of rheumatic fever and/or other serious complications. Dosage for routine streptococcus prophylaxis in patients with a history of rheumatic fever or congenital heart disease may be 200,000 units daily or twice daily. When such patients undergo tonsillectomy, tooth extraction, or other minor surgery, the prophylactic dose should be 500,000 units every six hours given two days prior to surgery and for two days postoperatively. If oral medication is not feasible on the day of surgery, parenteral therapy should be considered. Mild to moderate severe pneumococcus pneumonia has been treated effectively with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be given every six to eight hours in conjunction with indicated surgical procedures.

For gonorrhea in males, 500 mg. (800,000 units) every six hours; three doses may be employed; in females, 500 mg. every four hours; six doses are recommended. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving penicillin; monthly serologic tests for a minimum of three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units) in bottles of 50 and 100; 250 mg. (400,000 units), and 500 mg. (800,000 units) in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) 5 cc. of solution, in 40, 80, and 150-cc.-size packages.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

Estomul does what standard anticholinergics fail to do—it provides a continuous climate for ulcer healing, eliminating the peaks and valleys of ordinary therapy. It is a comprehensive formulation providing sustained antisecretory effect on gastric activity. A recent study¹ reported a 56% satisfactory response with a maintenance schedule of Estomul in patients refractory to all previous medication. In less difficult peptic ulcer patients, a second study² noted a 94% satisfactory response. Both studies confirmed this clinical improvement radiologically. And both reported unusually prolonged reduction of basal secretion. With a maintenance course of Estomul therapy you can provide this continuous climate for healing in your own peptic ulcer patients.

A continuous climate for ulcer healing

(not simply episodic reduction of secretion or motility)

Estomul[®]

Tablets

Each swallow tablet contains: orphenadrine hydrochloride, 25 mg.; bismuth aluminate, 25 mg.; magnesium oxide, 45 mg.; aluminum hydroxide—magnesium carbonate (as co-precipitate), 500 mg.

Good-Tasting Liquid

Each tablespoon (15 cc.) contains: orphenadrine hydrochloride, 25 mg.; bismuth aluminate, 50 mg.; aluminum hydroxide—magnesium carbonate (as co-precipitate), 918 mg.

Dosage: 1 or 2 tablets or 1 or 2 tablespoons 3 times daily.

Supplied: In bottles of 100 tablets or 12 fluid oz.

Side Effects: Doses in excess of 6 tablets or 6 tablespoons daily may produce dryness of mouth or blurring of vision. Other possible side actions include: tachycardia, palpitation, urinary hesitancy or retention, dilatation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, constipation, drowsiness, urticaria and other dermatoses. Infrequently, an elderly patient may experience some degree of mental confusion.

Contraindicated: In glaucoma, pyloric or duodenal obstruction, stenosing peptic ulcers, prostatic hypertrophy or obstruction at the bladder neck, achalasia and myasthenia gravis.

References: 1. McHardy, G. G., Judice, R. C., McHardy, R. J., and Cradic, H.: Southern Med. J. 59:459 (April) 1966. 2. Slanger, A.: Western Med. 6:205, 1965.



Riker Laboratories • Northridge, California 91324



HIGHLAND HOSPITAL

ASHEVILLE, NORTH CAROLINA

Founded 1904

A DIVISION OF THE DEPARTMENT OF PSYCHIATRY OF
DUKE UNIVERSITY

Accredited by the Joint Commission on Accreditation and Certified
for Medicare

Complete facilities for evaluation of and intensive treatment of psychiatric patients, including individual psychotherapy, group therapy, psychodrama, electro-convulsive therapy, Indoklon convulsive therapy, drugs, social service work with families, family therapy, and an extensive and well organized activities program, including occupational therapy, art therapy, athletic activities and games, recreational activities and outings. The treatment program of each patient is carefully supervised in order that the therapeutic needs of each patient may be realized.

Complete modern facilities with 85 acres of landscaped and wooded grounds in the City of Asheville.

Brochures and information on financial arrangements available

Contact: Mrs. Elizabeth Harkins, ACSW, Coordinator of Admissions
or

Charles W. Neville, Jr., M.D.
Assistant Professor of Psychiatry and Medical Director
Area Code 704 253-2761

**For the taste
you never
get tired of.**



LABSTIX

new from Ames

5 basic uro-analytical facts in 30 seconds

Labstix®

BRAND

REAGENT STRIPS

...broadest urine screening possible from a single reagent strip

Urine test results with LABSTIX Reagent Strips can represent significant guides to differential diagnosis or therapy in many conditions. An unexpected "positive" may enable you to detect hidden pathology—long before more recognizable symptoms become evident. Negative results, which permit you to rule out abnormalities in a broad clinical range, can serve as baseline values for reference in future examinations. The 5 colorimetric test areas encompassed on LABSTIX Reagent Strips are:

pH—values are read numerically in the essential range of pH 5 to pH 9.

Protein—results are read either in the "plus" system or in mg. % in amounts approximating "trace," 30, 100, 300, and over 1000 mg. %.

Glucose—provides a "Yes-or-No" answer for urine "sugar spill."

Ketones—detects ketone bodies in urine—both acetoacetic acid and acetone. Reacts with as little as 5 to 10 mg. % of acetoacetic acid.

Occult Blood—specific test for intact red cells, hemoglobin or myoglobin. Results are read as negative, small, moderate or large amounts.

Now a Clear Reagent Strip of Firm Construction

...facilitates handling during testing procedure. Excellent color contrast made possible by the clear plastic strip, together with the clearly defined color charts provided, permits precise, reproducible colorimetric readings in all 5 test areas. A more definitive interpretation of uro-analytical facts is made possible.

Available: LABSTIX Reagent Strips, bottles of 100 (color charts are supplied with each bottle).



Ames Company, Inc., Elkhart, Indiana

AMES



IDENTI-CODE™

(formula identification code, Lilly)

**takes the guesswork
out of product
identification**

A special letter-number symbol will appear on each Lilly capsule or tablet. By checking this code against the *Identi-Code Index*, you will be able to identify each unit quickly and accurately:

In cases of overdosage

As a safeguard against error

When medication was prescribed by another physician

When the prescription label is lost

During telephone conversations with patients

A complete explanation of Identi-Code and its use is provided in the *Identi-Code Index*. If you have not yet received an index, your Lilly representative will be pleased to supply you with a copy.

Representative Lilly Products Bearing Identi-Code

Pulvule®	Enseal® (enteric-release tablet, Lilly)	Capsule-Shaped Tablet	Elliptical Tablet	Round Tablet



DORSEY

winter 1966

Season

A journal within a journal published quarterly in the interests of better medicine by Dorsey Laboratories, a division of The Wander Company, Lincoln, Nebraska. Address communications to Raymond C. Pogge, M.D., Director of Medicine.



this issue: the nose as a shock organ

the nose as a shock organ

by Charles J. Shagoury, M.D., Chelmsford, Massachusetts

"Is it a cold, hay fever, or has he been reprimanded by his boss?" Occasionally, you will ask yourself this question when confronted by a patient with abrupt onset of rhinorrhea, nasal obstruction, and sneezing. Usually the history will elucidate the problem, but examination of the nose will often provide valuable clues to the correct diagnosis.

The nose is a shock organ in a double sense. First, it is in the nose that the confrontation takes place with the surrounding atmosphere. For twenty-four hours a day, the nose must meet the varying challenges of the inspired air, containing perhaps noxious chemicals, dust, dirt, bacteria, viruses, fungi, and industrial pollutants of all kinds, and render it clean, virtually sterile, and fit for the sensitive alveoli of the lungs. Whatever the temperature or humidity of the atmosphere, the nose must transmit it to the lungs at approximately 98°F, and with a humidity of approximately 40%.¹

Second, in particularly susceptible patients, the nose acts as a shock organ in a manner totally unrelated to its normal function. Persons with hay fever respond to ordinarily harmless materials by extreme nasal congestion, with marked rhinorrhea and violent spasms of sneezing. In some patients, exposure to threatening or disagreeable agents, or situations involving mental conflict may result in a reaction which is exclusively nasal, with swelling of the turbinates, and marked hypersecretion.²

Nasal symptoms usually result when the nose seeks to perform its function of getting rid of noxious and dangerous elements in the atmosphere, and prevent their admission to the trachea and lungs. Small particles are removed by the mucous coating which blankets the nasal passages. This mucous blanket contains a bacteriostatic agent, lysozyme, which destroys most air-borne bacteria.³ The mucinous content renders the surface sticky, causing dusts and small particles to adhere. It has been postulated that this process is rendered more effective through adsorption because of a surface electrical charge on the nasal mucosa.⁴ The cilia then sweep the particu-



late matter to the pharynx. The nose can prevent entrance into the lungs of particles as small as three microns in diameter, but smaller particles elude the nasal barrier. Most bacteria causing respiratory infections are one to three microns in diameter, but since they usually are inhaled in clumps, they are efficiently removed as a rule. Viruses, which are of the order of 1/1000 of this size, are less efficiently dealt with, unless they occur in very large aggregates.⁵

The nose will react in a more or less similar manner, whatever the nature of the offending agent, whether it be an irritant chemical, virus, pollen, or distasteful emotional situation. In acute coryza, the most characteristic sign is a profuse watery discharge. The volume of secretion may rise from practically nothing to nearly 60cc in twenty-four hours.⁶ The mucous membrane is reddened and engorged, while the turbinates are markedly swollen. After the first day or two, the secretion becomes thicker, yellowish, and more difficult to expel. The surface cells are largely destroyed, contributing to the copious discharge, which now also contains numerous inflammatory cells which have migrated to the area. Gradually, over a period of a few days, or a week, the flood abates, the swelling and redness subside, and the nasal epithelium resumes a healthy appearance.

Repeated attacks of rhinitis, particularly if there is an underlying element of obstruction, may result in chronic rhinitis. The mucous membrane is constantly swollen and reddened. Sticky, mucopurulent secretions are a continuous feature, and the glandular elements are hypertrophied. Commonly, the mucosal surface takes on an irregular, rounded "mulberry" appearance, and nasal passages are occluded by the swollen turbinates and redundant mucosa.

While all of us are susceptible to colds, the victim of hay fever, or allergic rhinitis, displays a marked nasal reaction to materials in the air which leave his associates unaffected. In such a patient, the nasal mucosa has become an allergic "shock" organ. Contact with the nasal allergen causes local release of histamine, with vasodilatation, increased vascular permeability, and severe nasal congestion, similar to the "wheal" and "flare" reactions in the skin, when the epidermis is the allergic shock organ. While we eagerly await the coming of spring, the hay fever sufferer dreads the blooming season, whose invisible pollens are poisons to his sensitive nose. His neighbor's cat or dog may provoke paroxysms of uncontrollable sneezing. In some cases a specific allergen is not identified, but the triad of rhinorrhea, nasal obstruction, and sneezing is present.⁷ The nose in these cases shows a pale, boggy, edematous mucosa, with a thin mucoid secretion. The mucous membrane shows extreme retractility to 1% cocaine or ephedrine. If the patient has medicated himself prior to examination, the nasal passages may appear abnormally patent, or show exaggerated congestion due to rebound reaction. The secretion may show a large number of eosinophils particularly after an attack of sneezing or rhinorrhea. Touching the mucosal surface, especially of the inferior turbinate, leaves an indentation, showing that the swelling is due to stasis and edema, rather than actual hyperplasia of the mucous membrane as in chronic hypertrophic rhinitis. Though the pale swollen mucosa is the hallmark of allergic rhinitis, as usually seen by the physician, exposure of allergic subjects to their known allergens results in a brief hyperemic phase, followed by pallor and edema.⁸

In the later stages of allergic rhinitis, the chronic edema of the mucous membrane results in the formation of polyps, clusters of grape-like masses hanging from the roof of the nose, with a pale glistening surface, contributing significantly to the sense of nasal obstruction and oppression.

A large group of patients show symptoms of nasal congestion when confronted by adverse life situations.⁹ In these unfortunate persons, anxiety, frustration, and resentment are often accompanied by a runny nose and nasal obstruction. Lacrimation adds to the nasal stuffiness. This autonomic response, mediated by the parasympathetic nervous system, may be part of a general parasympathetic reaction, or may possibly represent in part, a symbolic effort to wash out and crowd out the offending situation.

Nasal congestion may also occur in some patients at times of sexual stimulation, and in women during menstruation and pregnancy, even to the point of epistaxis.¹⁰ The relationship is obscure; castration results in atrophy of the nasal glands, and their action is inhibited by the hormones of the hypophysis and the thyroid.¹¹ The nose may be the shock organ in drug therapy. The nose may also bear the brunt of industrial stress, in those who work in a hot dry atmosphere, or those exposed to acid fumes, or irritating dusts. As the air in our cities is increasingly polluted by exhaust fumes, and industrial irritants, whole urban populations may suffer from chronic nasal and respiratory symptoms.

Of course, nasal reactions are not just infectious, or allergic, or emotional. Particularly in the chronic sufferers, there is an interdependence of all three. Death of a relative, or other psychic shock can pre-

(concluded on following page)

it's a
comforting thing
to know



For postnasal drip, clogged ears
and stuffed and runny noses

Triaminic® timed-release tablets

Each timed-release tablet contains:

Phenylpropanolamine hydrochloride	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

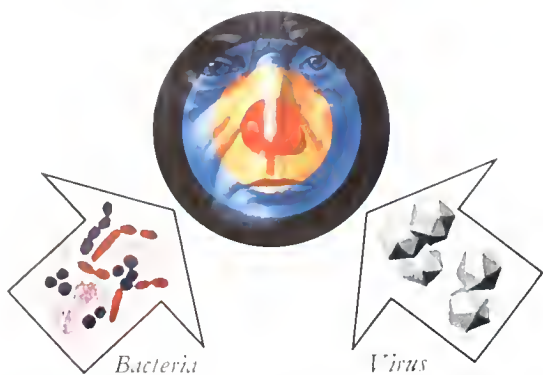
keep patients comfortable 'round the clock. 24-hour decongestion on just a single tablet dosed morning, mid-afternoon and at bedtime. Patients regain senses and can breathe, smell and taste again.

Triaminic. Isn't that a comforting thing to know?

Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. **Precautions:** The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

(Advertisement)

precipitate an attack of rhinorrhea in hay fever sufferers.¹² Others develop attacks of vasomotor rhinitis following change in temperature, chilling, or exposure to the sun, or simply warm bedclothes.



The complex interplay of allergy and infection is largely unclear. Allergy to the viruses and bacteria which cause infection has been postulated, but is difficult to demonstrate. The swollen obstructed allergic nose is more susceptible to infection. At the same time, infection often precedes or precipitates an allergic attack. Exposure of a susceptible patient to an allergen can activate latent virus organisms leading to infection.¹³ This "jolt" reaction represents a summation of an allergen and a virus leading to symptoms in the nose as a shock organ, which either could have produced alone. In childhood, repeated attacks of bronchitis and colds may be inflammatory reactions to an allergen, or precipitated by exposure to an allergen. These children may later develop typical allergic rhinitis. On the other hand, children with typical allergic histories, eczema, asthma, and allergic familial backgrounds, may later develop typical infectious rhinopathies. Skin tests in such patients are usually positive.

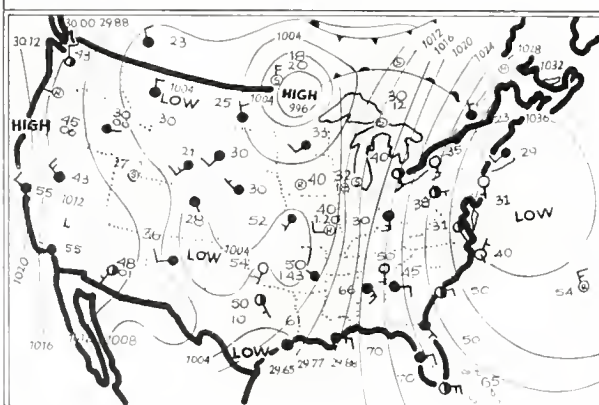
Nasal reactions are part of the systemic response of the patient to an unwelcome stimulus. In cases of respiratory infection and exposure to atmospheric irritants, the reactions are useful, and to some extent desirable. They are usually self-limited, disappearing within a few days, or upon removal of the provoking agent. Here the distressing symptoms can be ameliorated with appropriate decongestant agents, but, in the case of severe or complicated respiratory infections, antibiotics may be given, with reasonable confidence of a cure. On the other hand, when nasal reactions are the peculiar response of an individual to an allergen, or to an undesirable situation, they serve no useful purpose. The nose here is a shock organ in a stressful situation, but can furnish no response of value. It merely causes the patient symptoms which add to his problems. In these cases,

symptomatic treatment is of great benefit, but often the underlying faulty pattern of response cannot be altered. Such a patient may literally be considered to be paying his way in life "through the nose."

References

1. Maures, E. R., Mendez, F. C., Jr., and Hilsinger, R. C.: Importance of the Nose in Filtering and Humidifying Inspired Air. *Ohio State Med. J.* 61:41-42.
2. Holmes, T., Goodell H., Wolf, S., and Wolff, H. G.: *The Nose*. Springfield, Ill. 1950 Charles C. Thomas p. 10 ff.
3. Boies, L. H. R.: *Fundamentals of Otolaryngology*. Phila. W. B. Saunders Co. 1954 p. 160.
4. Proetz, A. W.: *Applied Physiology of the Nose*. St. Louis 1941 Zimmerman-Petty Co. p. 6.
5. Spikard, A.: *The Common Cold, A Survey*. *Disease of the Chest* 48:545-49, Nov. 1965.
6. Ibid.
7. Bourdial, J.: Role of Allergy in Upper Respiratory Tract Infection. *Europa Med. Paris* 4:75-80 1965.
8. Holmes, et al. *The Nose* p. 22.
9. Ibid. p. 320.
10. Proetz, A. W. op. cit. p. 321.
11. Ibid. p. 320.
12. Rees, Linford J.: Physiogenic and Psychogenic Factors in Vasomotor Rhinitis. *J. Psychosomatic Research* 8:101 Sept. 1964.
13. Horesh, A. J.: Allergy and Infection. *An Allergy* 23:621-35 Dec. 1965.

Weather Forecast Throughout the Nation



RAIN TURNING TO SNOW, INCREASING WINDS AND DROPPING TEMPERATURES FOLLOWED BY COUGH, CONGESTION AND PAIN

Tussagesic®

provides up to 24-hour coverage of the tough cold with a single timed-release tablet dosed morning, midafternoon and at bedtime. Coughs are broken up, runny and stuffed noses are cleared and pain is relieved.

Each Tussagesic® timed-release tablet contains:

Triaminic®	50 mg.
(phenylpropanolamine hydrochloride 25 mg.; pheniramine maleate 12.5 mg.; pyrilamine maleate 12.5 mg.)	
Dextromethorphan hydrobromide	30 mg.
Terpin hydrate	180 mg.
Acetaminophen	325 mg.

Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. **Precautions:** Patient should not drive a car or operate dangerous machinery if drowsiness occurs. Except under professional care, do not give to patients under 12 yrs. or those who have persistent cough, high fever, heart or thyroid disease, hypertension or diabetes or use for more than 10 days.

TUCKER HOSPITAL, Inc.

212 West Franklin Street
RICHMOND, VIRGINIA

A private hospital for diagnosis and treatment of psychiatric and neurological disorders. Hospital and out-patient services.

JAMES ASA SHIELD, M.D.

WEIR M. TUCKER, M.D.

GEORGE S. FULTZ, JR., M.D.

EDWARD W. GAMBLE, III, M.D.

CATHERINE T. RAY, M.D.

GERALD W. ATKINSON, M.D.



...create the
proper professional image
in the patient's mind

You Are
Invited....



SUITE 43 • • •

**PURCHASE OR
BUDGET TERMS**

See this beautiful suite designed
for the general practitioner and available in a variety
of colors of both enamel and upholstery.
This suite has all the design features and
conveniences desired by the physician in general practice.
Scale and lamp are extra. Come in today.

CAROLINA SURGICAL SUPPLY COMPANY

706 TUCKER ST., RALEIGH, N.C.
PHONE 833-8631



Perhaps there have been times when you wanted to prescribe erythromycin and triple sulfas for little patients. Now you can—with a choice of two new fine-tasting pediatric forms.

E
C
St
ta
In
ta
fo
Di
rep
inf
off
The
day
Of
cur
par
and
Ac
1. Cas
Abt
2. Per
Pra

New—Two Pediatric Forms of Erythromycin and Triple Sulfas



ERYTHROCIN®-SULFAS Chewable

(Erythromycin ethyl succinate-trisulfapyrimidines chewable tablet)

In clinical trials^{1,2}, this orange-flavored tablet was given to 55 patients, aged four months to 18 years.

Diagnoses (multiple in some cases) represented a cross section of bacterial infections commonly seen in pediatric office practice.

Therapy was given from three to 12 days, with an average of six days.

Of the 55 patients, 30 were reported cured within 72 hours, while 22 showed partial recovery within the same time, and subsequent clinical cure.

A clinical cure rate of 94.5%

ERYTHROCIN®-SULFAS Granules

(Erythromycin ethyl succinate-trisulfapyrimidines granules for oral suspension)

87 patients were treated^{1,2}—all children, ages four months to 15 years.

The diagnoses were multiple in some cases and were chiefly bacterial infections of the respiratory tract.

Dosage was maintained from three to 10 days; average treatment was five days. All of the ill children accepted the orange-flavored suspension favorably.

53 were clinically cured within 72 hours, while 32 showed partial relief within the same time, and subsequent clinical cure.

701358

A clinical cure rate of 97.7%

1. Case Reports on File, Dept. Clin. Development, Abbott Laboratories.
2. Polley, R.F.L., Use of Erythromycin-Sulfas in Office Practice, Western Med., 7:177, July, 1966.



Brief
Summary
on next
page

ERYTHROCIN®-SULFAS

Brief Summary

Contraindications: Known sensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, premature or newborn infants.

Warnings: As with other forms of sulfonamide therapy, carefully evaluate patients with liver or kidney damage, urinary obstruction, or blood dyscrasia. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests if used repeatedly at close intervals or for long periods.

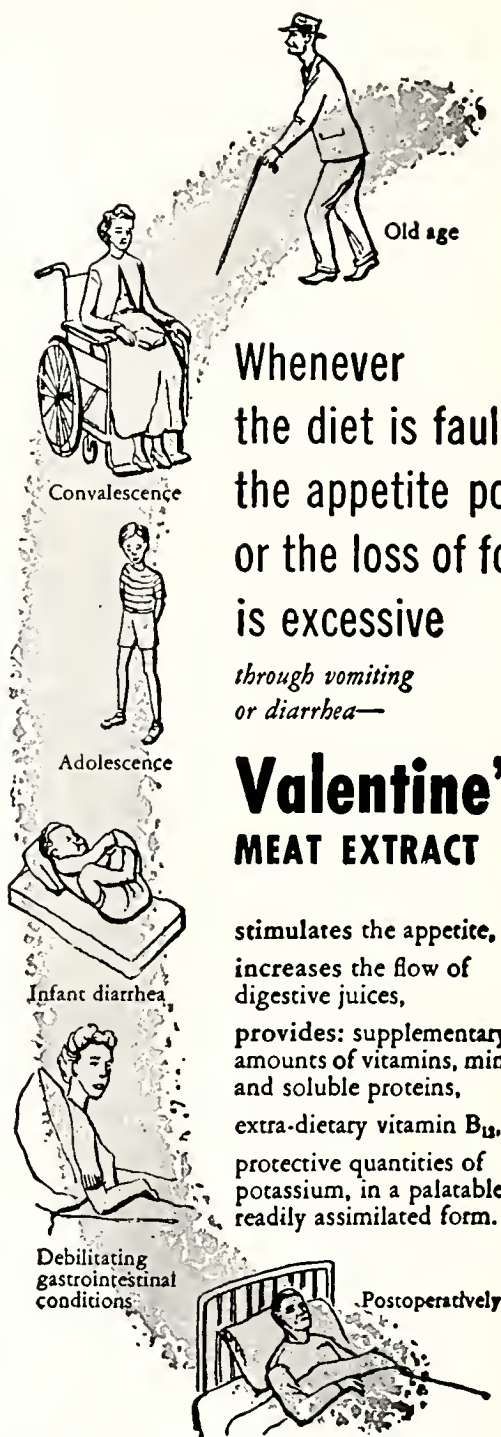
Precautions, Side Effects: Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin, generally controlled by reduction of dosage. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent. Use sulfonamides with caution in patients with a history of allergy. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. If overgrowth of nonsusceptible organisms occurs, withdraw the drug and institute appropriate treatment. If a patient should show signs of hypersensitivity, appropriate countermeasures (e.g. epinephrine, steroids, etc.) should be administered and the drug withdrawn.

Adverse Reactions: Sulfonamide therapy may be associated with headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Side effects due to erythromycin are infrequent, but occasional abdominal discomfort, nausea, or vomiting, urticaria and other skin rashes may occur.

Supplied: The Granules for Oral Suspension come in bottles of 60 ml. and 150 ml. The Chewable tablets are in bottles of 50. Each 5-ml. teaspoonful of reconstituted Granules or each Chewable tablet provides erythromycin ethyl succinate equivalent to 125 mg. of erythromycin activity and 167 mg. of each of sulfadiazine, sulfamerazine and sulfamethazine.

701358



Whenever
the diet is faulty,
the appetite poor,
or the loss of food
is excessive

*through vomiting
or diarrhea—*

Valentine's MEAT EXTRACT

stimulates the appetite,
increases the flow of
digestive juices,
provides: supplementary
amounts of vitamins, minerals
and soluble proteins,
extra-dietary vitamin B₁₂,
protective quantities of
potassium, in a palatable and
readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

DOSAGE is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy. Dilute with two or more equal volumes of water.

VALENTINE Company, Inc.
RICHMOND 21, VIRGINIA

To "catch" your patient's cold
so others won't...



the speckled tablet with
a core of difference

SUSTAINED-ACTION

Naldecon®



Each tablet contains:	Outer layer (immediate action)	Core (sustained action)
phenylpropanolamine HCl	20 mg	20 mg
phenylephrine HCl	5 mg	5 mg
phenyltoloxamine citrate	7.5 mg	7.5 mg
chlorpheniramine maleate	2.5 mg	2.5 mg
Each teaspoonful (5 ml) of syrup contains the equivalent of one-half tablet		

For rapid and sustained symptomatic relief of colds and minor upper respiratory infections.

Prescribing Information: For complete information consult Official Package Circular. **Effectiveness:** Clinical experience has shown this formulation to be effective in relieving the symptoms of nasal congestion associated with pollen allergy or minor upper respiratory infections (common cold, nasopharyngitis, acute and chronic sinusitis). **Precautions:** Do not drive or operate machinery while taking Naldecon. Exceed dose or give to children under 6 years old only on advice of physician. **Contraindications:** Severe hypertension, hyperthyroidism, serious organic heart disease or severe diabetes mellitus. **Usual Dose:** Adults: One tablet morning, midafternoon and evening. Naldecon tablets are scored and may be broken for fractional dosage, without loss of sustained-action effect. **Supplied:** Bottles of 50 and 500 tablets. Syrup, 1 pt. bottle.

BRISTOL

Bristol Laboratories
Division of Bristol-Myers Company
Syracuse, New York 13201

**How long will it take him
to recover from the flu
if he just doesn't care?**



Does he really care?
Is he alert, encouraged,
positive and optimistic
about getting out of bed
and back to work soon?

Or is he giving in to
the depressing impact
of confinement?

When functional fatigue
complicates convalescence,
Alertonic can help...

Pleasant-tasting Alertonic is pipradrol hydrochloride—an effective cerebral stimulant whose gentle analeptic action helps counteract the apathy and inertia that so often delay convalescence—together with an excellent vitamin and mineral formula, in a satisfying 15% alcohol vehicle.

Nothing fosters confidence and a sense of well-being better than your own personal warmth, understanding and encouragement together with Alertonic to help insure prompt response.

*Adequate dosage is important: Prescribe Alertonic—
one tablespoonful t.i.d., 30 minutes before
meals...tastes best chilled.*

*And for your patient's sake, prescribe Alertonic
in the convenient, economical one-pint bottle.*

Alertonic[®]

Available Only On Prescription

Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B₁) (10 MDR*), 10 mg.; riboflavin (vitamin B₂) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B₆), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.

†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

Merrell

THE WM. S. MERRELL COMPANY
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215

ECONOMICAL!

CORDRAN[®]
FLURANDRENOLONE
Half Strength
Lilly

cream and ointment

Additional information available to physicians upon request.

Eli Lilly and Company, Indianapolis, Indiana 46206.

5-7211

NORTH CAROLINA MEDICAL JOURNAL

OWNED AND PUBLISHED BY

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 28

JANUARY, 1967

NUMBER 1

Education of the Diabetic Patient – Physician's Dilemma Clinical Research in Patient Care

W. MICHAEL BOLT, M.D., AND EMERY C. MILLER, M.D.

WINSTON-SALEM

Diabetes mellitus is second only to non-toxic goiter as the most common endocrinopathy in North America.¹ The incidence was estimated at 1.7% as early as 1953 in the Oxford Survey and is presently reported to be as high as 2.5% of the population.^{2,3} Likewise, Joslin and Lombard⁴ recognized the inadequacy of the diagnosis as early as 1936 by a review of death records.

The threat of communicable diseases and the problem of primary prevention has long been investigated. Recent efforts have been directed toward secondary and tertiary prevention. Herein lies the future health program, related directly to the growing problems we now face in medicine—chronic disease and continuing medical care. Diabetes mellitus is such a problem.⁵

Historical Background

The treatment of diabetes mellitus has been an example of rationalism versus empiricism since the 17th century.⁶ Galen insisted that the disease was primarily in the kidney and analogous to diarrhea of the gastrointestinal tract, while Thomas Welles (1621-1675) stated that it was related to "precipitation of blood and setting loose of particles carried off by the ureters." Cullen (1712-1790) incriminated the alimentary tract, and John Rolls (1808) implicated the stomach. Later John Latham theoretically

elaborated dietary treatment via phosphoric acid and its salts (endowed heavily in meats), since the former were lacking in diabetic urines.⁶

With the new techniques of the chemists in the 19th century, great advances were made in the knowledge of diabetes mellitus. Thomas Watson's famous lectures were eventually published in textbooks (1836-1837). Even in that century the essentially correct practice of dietary restriction with reduction of saccharine was in vogue, although the theory behind it was incorrect.⁷ The present therapy, after the work of Claude Bernard, is firmly grounded and on the whole astonishingly effective. Theory, likewise, has made great strides; however, the more we investigate, the less we are sure of a completely satisfactory theory. Our basic problems are obviously in sobering kinship with those of physicians of one hundred years ago.

As mentioned previously, however, the perplexing problems of today, and even more so those of tomorrow, are related to primary prevention and investigation, but more emphatically to secondary and tertiary prevention, particularly in progressive and continuing diabetic care.

Importance of Patient Education

In a chronic illness such as diabetes mellitus, the future health of the patient in terms of extended complication-free years may well be a function of the effectiveness of the traditional patient-orientation program as well as the therapeutic program. The latter certainly should continue to be flexible in view of the recent ideas of Lukens⁷ on the re-

From the Department of Medicine, Bowman Gray School of Medicine of Wake Forest College and the North Carolina Baptist Hospital, Winston-Salem, N. C.

Request for reprints to the Department of Medicine, Bowman Gray School of Medicine, Winston-Salem, N. C. 27103.

birth of regular insulin, as well as the recent work on growth hormone and its possible relation to diabetic complications.

With about 2.0 million known cases of diabetes mellitus in the United States and about 200,000 new cases diagnosed each year, the education of the diabetic patient should be re-evaluated. This problem has been the topic of numerous conferences and discussions, initiated in particular by the American Diabetes Association, the American Dietetic Association, and the Public Health Service.

The present study was undertaken in an effort to evaluate more completely several factors regarding the education of the diabetic patient, the effectiveness of this education in his personal management, and the general effect of personality on the patient-management of diabetes; and to elucidate in so far as possible the accompanying roles of both the patient and his physician in the long-term management of this chronic illness.

Three questions immediately confronted the investigators in reviewing the effect of the traditional educational and therapeutic programs on the management of diabetes:

1. What does the diabetic patient actually know about his disease?
2. Is his level of knowledge reflected in his level of home-care or control?
3. How does the diabetic live with his condition, including his feelings, attitudes, and practices?

Are the answers to any of the above questions related directly to "continuing care," "good control," and/or "diabetic complications"?

In an attempt to evaluate the above questions, the authors investigated and tested the general knowledge of diabetes by the patient, and also personally interviewed diabetics in their homes. The interviews were undertaken in an effort to investigate, evaluate, and correlate their theoretical knowledge with their daily lives and to make the natural history of the patient's medical care a matter of concern, with the patient himself rather than the disease the focus of observation.

Materials and Methods

The investigation was carried out in two separate phases.

Part I of the study involved questionnaires administered to diabetic patients from the North Carolina Baptist Hospital Diabetic Clinic. The questionnaire was designed with the sole purpose of obtaining information about the patient's knowledge of diabetes (Appendix A). It was administered to patients drawn at random from the clinic, the only criteria being age (14 to 56 years) and insulin dependency.

The questionnaire required from 15 to 20 minutes to administer; to minimize variables and confusion, any questions regarding meaning were explained. The completed questionnaires were scored by the investigators on the simple basis of (1) adequate knowledge, or (2) inadequate knowledge of diabetes.

Patients with "adequate knowledge" gave a generally correct reply to each question, but the answers varied widely in detail, in keeping with the intellectual and educational background of the individual patient. "Adequate knowledge" is what we expect *all* diabetics to know about the disease, making allowance for difficulty in verbalizing.

The classification of a particular patient's store of information as "adequate" or "inadequate" is essentially arbitrary but, we hope, nonetheless fair and consistent. No effort was made to evaluate the effectiveness of the initial orientation program at the North Carolina Baptist Hospital through the clinic questionnaires, since many diabetics in our clinic are not the products of our program. The population in the series was obviously a cross-section of patients with regard to age, sex, socioeconomic, and educational backgrounds.

The second part of the investigation involved diabetic patients from the North Carolina Baptist Hospital who were between the ages of 14 and 40, who had insulin-dependent diabetes, and who lived within one hundred miles of Winston-Salem. The patients were contacted in the clinic or by telephone, the investigation was explained, and arrangements were made for a home interview with

the patient and his immediate family. The overall purpose of the interview was to investigate the effectiveness of diabetic education on personal management; to elucidate and substantiate the general effect of personality on self-management; and to elicit the respective importance of the roles played by patient, family, and physician in continuing diabetic care.

The interviews were scheduled to last from one to one and one-half hours. The questionnaire (Appendix A) was administered to the patient while the interviewer discussed "diabetes" with the remainder of the family. A second questionnaire (Appendix B) was used as a guide by the investigator in order to minimize variables and cover identical topics during the interviews.

In summary, the two questionnaires were designed primarily to obtain information about the patient's knowledge and its relationship to his level of home care; to investigate *how* he actually lives with his condition, i.e. feelings, attitudes, practices; and to make the patient himself the focus of observation rather than the disease.

Results

The results will likewise be reported in two parts.

Part I involved questionnaires administered to 62 diabetic patients from the North Carolina Baptist Hospital Diabetic Clinic. These were scored by the investigator on the simple basis of (1) adequate knowledge, or (2) inadequate knowledge of diabetes.

The ages ranged from 14 to 56 and educational background from the fourth grade to graduation from college. The series was too small to break down the analysis into age, sex, education level or socioeconomic class.

Twenty (32.2%) of the 62 patients were considered to have adequate knowledge of diabetes mellitus on the basis of the questionnaire. Conversely, 42 (67.8%) were judged to have inadequate knowledge of the disease. No definite statement can be made in this small series about the relationship between the level of formal education and knowledge of diabetes.

Forty patients (64.4%) seemed to have in-

adequate knowledge regarding insulin and the particulars of medication, while 52 (83.9%) seemed to have inadequate knowledge regarding diet.

The series was too small to make further statistical evaluation.

Part II involved home interviews with diabetic patients from the North Carolina Baptist Hospital Diabetic Clinic and one private patient. The interviews were conducted and questionnaires administered as presented in methods and materials. Twenty-two patients and their families or one parent were interviewed, including 12 males and 10 females.

Ages varied from 13 to 36, while education completed ranged from eighth grade to two college graduates. The families or one parent or husband were present in every instance except one.

Twenty-one patients and one or both parents were interviewed. Of these, 14 had inadequate knowledge of diabetes in general, while 8 had adequate knowledge. Two of the latter held college degrees while the educational level of the remaining 6 varied from sixth grade to high school. On the basis of answers to questionnaire no. 2 questions 11-17, 20, and 22-26, (Appendix B), the investigation could establish no direct relationship in this small series between the level of knowledge and the level of home care. In general, the level of home care seemed to be a function of several factors (obviously subjective), including personality, emotional lability, and relationships with family and physician.

Emotional factors played a greater part in daily diabetic care than had previously been appreciated. Sixteen of the 22 patients stated "some change" in their control with emotional challenge—i.e., arguments, school problems, marriage, and interpersonal problems, however minor. Questions 3-6, 8-10 and 18, 19 were used to evaluate this factor. It is significant that school, work, and home problems were cited as major deterrents in the self-management of several patients. Six patients stated they were ashamed of having diabetes. Three of these tried to keep their

fiance or husband from learning about their condition.

Patient, family, and physicians all contributed to the daily care of all diabetics interviewed. The majority of the patients, however, seemed to accept the problems encountered as theirs alone, stating that their daily care was really a function of their own interest, attitudes, and feelings at that time. Many expressed family roles as an aid or a detriment to management, depending on the approach of the family; the majority seemed to consider passive aid of greater benefit than active help.

Many of the patients expressed indifference regarding clinic visits. They felt that the visits were necessary to their overall care, but expressed discomfort at seeing a different physician on each visit. All patients expressed an interest in group classes or discussions if available, and all desired further education of any type. Several families expressed animosity towards the clinic for "lack of information" about the progress and care of the patients concerned. Seventeen admitted that diet was altered, control was tightened, and urine tests increased in frequency a week or so before clinic visits. One patient said he altered his control in the above terms one week before the scheduled interview.

The practices of the interviewed patients as evidenced by answers to questions 11-17, 20, and 22-26 revealed remarkable discrepancies between knowledge, level of home care, and practices (*i.e.* how the patient actually lives with his condition). Eighteen admitted that their only dietary restriction was the avoidance of granulated sugar.

Only 4 patients tested their urine as often as twice a day; 4 managed to test it once a day, and 12 admitted they rarely tested it oftener than once a week and often went months without doing so. Urine charts were a thing of the past and were kept only by interested parents. Many of the patients stated they followed their control program according to "the way they felt." Urinalysis seemed universally to be the last resort for dependency of control. All patients readily admitted forgetfulness regarding the proper

handling of diabetes and expressed a desire for *re-education* and advice at yearly intervals—especially regarding *diet*.

Finally, of great interest was the fact that ten patients (46%) had been tried on oral hypoglycemic agents *alone* initially or at some time during their diabetic history. All ten were by definition "juvenile onset" diabetics.

Discussion

Diabetes mellitus is one of the most common endocrine problems encountered on hospital wards. It is of concern to surgeon, internist, and pediatrician alike, with estimates of both juvenile and adult types comprising as much 7%-10% of the hospital population. In this day of advancing medicine, the challenge becomes one of secondary and tertiary prevention and progressive and continuing diabetic care. The question confronting endocrinologists, internists, and general practitioners revolves around an unanswered question—"What is good control?"

Educating the patient with regard to his disease is obviously a prolonged process. It cannot be completed on the initial hospital visit, but should continue progressively on an outpatient basis, with frequent instruction and re-instruction as new problems arise. Consequently it is usually not necessary to spend a great deal of time on the complications of diabetes during the initial hospital visit. However, the inadequacy of the patient's knowledge of complications noted in this study seems to indicate failure on the part of many clinics to complete the stated plan of education.

One-third of the diabetics from our clinic were considered to have adequate knowledge of diabetes mellitus while two-thirds were felt to have inadequate knowledge. This conclusion is in close agreement with the studies of Beaser,⁸ Anderson,⁹ and Stone.¹⁰ Reiterated fourfold is the fallacy of assuming proper indoctrination initially or subsequently in diabetic patients. Knowledge of diet and diabetic complications seem to be the patient's weakest points in this series.

The real dilemma becomes the relationship between the patient's knowledge of his con-

dition and home-care or control—that is, his everyday practices. The subjective data and insight gleaned from the 22 home interviews enable us to make the following statement: The patient's practices generally are *not* in any way related to his knowledge of diabetes but are a function of attending physician care, and the emotional factors regarding family, friends, *etc.*

The series repeats the work of Turnbridge¹¹ as well as Kantrow,¹² establishing continuity of supervision and emotional encouragement as essential parts of continuing diabetic patient care.

The practices of the interviewed patients leave much to be desired. Daily habits of diabetic regulation do not seem to be merely a function of the intelligence or socioeconomic status of the patients. Rather, their practices are a function of these factors plus *lack* of a vigorous program of continuing diabetic care, with interdisciplinary planning and continuity of supervision.

The data in this series tend to show that "control" as evidenced by the real parameter of evaluation—practice—rarely correlates with the well-known biochemical parameters of good control. Investigation of other areas of possible significance in the development of diabetic complications accordingly assumes greater importance.

Summary

Questionnaires to evaluate knowledge of diabetes mellitus were administered to 62 diabetic patients from the North Carolina Baptist Hospital Diabetic Clinic. Forty-two patients (67.8%) were judged to have inadequate knowledge of the disease.

Twenty-two diabetic patients and their families were interviewed in their homes. The practices of the interviewed patients are *not* related to their knowledge of the disease. The level of home care in this series is a function of the patient's personality, his emotional lability, the enthusiasm of the attending physician, and emotional factors regarding family and friends. Some sobering facts are revealed concerning the *actual* practices of diabetics. A question concerning the re-

lationship between these practices and stated "control" in the diabetic is advanced.

References

1. Danowski, T. S., and Tinsman, C. A.: Diabetes Mellitus: Still an Inadequately Recorded Disease, *Diabetes* 11: 239-40 (May-June) 1962.
2. Wilkerson, H. L. C., and Krall, L. P.: Diabetes in a New England Town: A Study of 3,516 Persons in Oxford, Mass., *JAMA* 135: 209-16 (Sept) 1947.
3. *Ibid.*: Diabetes in a New England Town: Report of Four-year Progress Study of the Oxford, Mass. Diabetes Survey of 1946-47, *JAMA* 152: 1322-29 (Aug) 1953.
4. Joslin, E. P., and Lombard, H. L.: Diabetes Epidemiology from Death Records, *New Eng J Med* 214: 7-9 (Jan) 1936.
5. McDonald, G. W.: Diabetes as a Public Health Problem in 1963, *Minnesota Med* 46: 1085-7 (Nov) 1963.
6. King, L. S.: Empiricism, Rationalism and Diabetes, *JAMA* 187: 521-6, (Feb.) 1964.
7. Lukens, F. D. W.: The Rediscovery of Insulin, *New Eng J Med* 272: 130-7 (Jan) 1965.
8. Beaser, S. B.: Teaching the Diabetic Patient, *Diabetes* 5: 146-9 (Mar-April) 1956.
9. Anderson, R. S., Gunter, L. M., and Kennedy, E. J.: Evaluation of Clinical Cultural, and Psychosomatic Influences in the Teaching and Management of Diabetic Patients: A Study of Medically Indigent Negro Patients, *Amer J Med Sc* 245: 682-91 (June) 1963.
10. Stone, D. B.: A Study of the Incidence and Causes of Poor Control in Patients with Diabetes Mellitus, *Amer J Med Sc* 241: 436-42 (April) 1961.
11. Turnbridge, R. E.: Sociomedical Aspects of Diabetes Mellitus, *Lancet* 6792: 893-9 (Oct) 1953.
12. Kantrow, A. H.: Rehabilitation and Placement of Diabetics, *Delaware Med J* 34: 279-84 (Oct) 1962.

Appendix

A. Questionnaire Concerning General Knowledge of Diabetes

Name:

Education:

Age:

Date:

1. What is diabetes? Is diabetes permanent?
2. What are the symptoms?
3. What is insulin? What does insulin do?
4. Are all insulins alike? Which insulin do you take?
5. What is an insulin reaction? What are the symptoms?
6. What is diabetic coma? What are the symptoms?
7. What are the three main ways to treat diabetes?
8. What diet are you on? Why should the fat in your diet be low?
9. Why do you check your urine? What does "acetone" in the urine mean to you?
10. Why should you exercise regularly?
11. Name several complications of diabetes mellitus.
12. (a) Name some foods "good" for you.
(b) Name some foods "bad" for you.
13. What health habits should you follow?
14. What do you take for insulin reaction?
15. Why should the diabetic diet, take insulin, and exercise?
16. How should you cook your foods? Why?
17. Are "special foods" necessary for the diabetic diet?

18. What is an average serving of a green leafy vegetable? cup(s)
19. Do all fruits have the same energy value?
Which has **more** food value?
 greens or potatoes same
 cabbage or beets same
 peas or tomatoes same
 corn or asparagus same
 bread or macaroni same
20. (a) What do you do when you feel bad?
 (b) If you are nauseated and aren't eating regularly, should you decrease your insulin?
9. What do you worry about most?
10. What will happen to you if you don't stay in good control?
11. How often do you really check your urine for sugar?
12. How often do you really check your urine for acetone?
13. What do you take for insulin reaction?
14. Do you follow your diet completely?
15. Do you keep records of your diabetes?
16. Is your insulin dosage always the same?
Do you ever supplement (add) regular insulin for special occasions?
17. Do you study often about diabetes?
18. Are you ashamed of having "diabetes"?
19. Are you afraid your children will get diabetes?
20. Do you tell your doctor about "spilling sugar"?
21. Does your doctor encourage/discourage you in the handling of your diabetes?
22. How often do you have insulin reaction?
23. Can you eat a little candy without getting out of control?
24. Do you eat extra if you exercise?
25. When you don't check your urine, how do you control your diabetes?
26. How many of the following have you eaten in the last week?

B. Questionnaire Concerning Patient's Regulatory Practices

1. How does your family feel about your diabetes?
Do they help you follow your treatment?
2. Who helps you with your insulin injections? Do you rotate sites?
3. Does taking insulin bother you?
4. Are you happy in your school/work?
5. Do you think your family should "diet" with you? Why?
6. What is your main problem with your diabetes?
7. Do you benefit from clinic?
In what way?
Would you rather come more often or less often?
Would you attend group classes on diabetes?
8. Do you take the magazine for diabetics called "Forecast"?
- sugar .. marmalade pie
 candy preserves cake
 honey syrup cookies
 jam wine, beer, alcohol .. chewing gum
 jelly molasses soft drink

HOW TO OBTAIN ANIMALS FOR RESEARCH

Laws to save unclaimed animals from pound gas chambers so they can serve in tests of new drugs, operations and other medical procedures have always been opposed by the antivivisectionists and their allies. . . . The only escape from this trap is responsible action now to bring about proper legal solutions to problems of animal supply. Now is the time for every state to adopt pound laws like those already in effect in Massachusetts, Connecticut, New York, Ohio, Illinois, Wisconsin, Minnesota, Iowa, South Dakota, Oklahoma and Utah.—Editorial in **Group Practice**, (14:789), November 1965.

The Surgical Management of Empyema in Children

FREDERICK H. TAYLOR, M.D., AND HUGH M. FOSTER, JR., M.D.

CHARLOTTE

The antibiotic era has seen a progressive decline in virtually all forms of pneumonia but one. In recent years many authors have pointed out an actual increase in staphylococcal pneumonia, particularly in infants. The antibiotics have undoubtedly saved many babies with fulminating cases, but clinical observations suggest that the use (or partial use) of these drugs has presented the surgeon with some unique problems. Perhaps, in all fairness to the antibiotics, they have actually salvaged otherwise lethal cases, but left the host in a state of stalemate between the offending organism and the mechanical complications which followed.

The great majority of children with post-pneumonic pleural complications recover completely with the usual conservative measures of thoracentesis, intercostal catheter drainage, or both. The present report is concerned with 20 infants and children who failed to recover with the use of these measures. These children survived and achieved relative clinical stability, but were left with residual complications which required surgery.

Review of Cases

The children varied in age from three months to nine years, with an average of two years. They had been ill for an average of 11 days before admission to the hospital. The majority had been treated previously with antibiotics as outpatients or in other hospitals. Usually these drugs had been given in small amounts and for short periods of time. All 20 patients on or shortly after hospitalization showed evidence of empyema. Lung abscess in 16, pneumatoceles in 7, bronchopleural fistulas in 6, and tension pneumothorax in 6 were ultimately discovered as underlying complications.

Empyema was the usual reason for thor-

acic surgical consultation. Thoracenteses were done in all cases and intercostal catheters were employed in 11. In the remaining 9 patients large-needle aspiration yielded nothing or only 1 to 5 ml. of fluid in small spurts into the aspirating syringes. This fluid was typically fibrinopurulent rather than gross pus. Small chunks of fibrin often came out of the aspirating needle. In none of the 20 children was it possible to evacuate the empyema, for reasons that were made clear by the findings at surgery. Intrapleural antibiotics were not used, as it was felt that the problem was primarily mechanical rather than bacteriologic. Intrapleural enzymes were not used either.

Pneumatoceles were noted on x-ray examination in 9 patients and were believed to be responsible for tension pneumothorax in 3 who were treated immediately by closed catheter drainage. Two other patients had tension pneumothorax resulting from lung abscesses which ruptured into the pleural space.

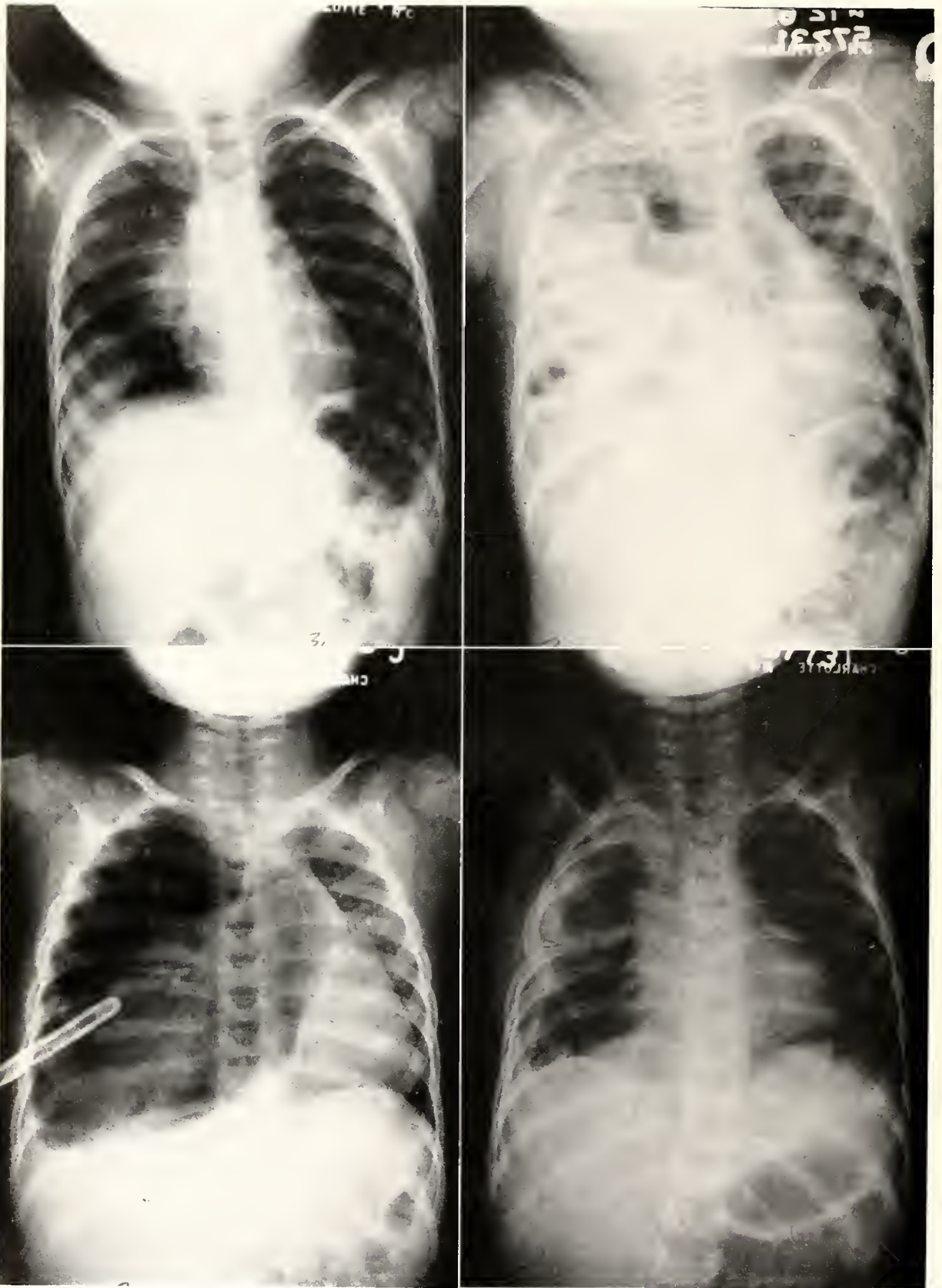
Intrapulmonary cavities were demonstrated by x-ray in only 3 cases, but at thoracotomy 16 of the 20 patients were found to have abscesses. This may be explained by the characteristic necrotizing process which extended to the periphery of the lung by way of the smaller bronchi. Intrapleural rupture thus occurred before an air-fluid level could be demonstrated within the lung.

Each child was acutely ill on admission and was treated for more than two weeks with antibiotics, thoracentesis, aspiration, the intravenous administration of fluids, and in many cases small blood transfusions. All settled into a state of relative stability but were left with residual empyema, lung abscess, bronchopleural fistulas, *etc.* (Figs. 1-A-1-E).

Preoperative bronchoscopy was done to aid in removing secretions and to rule out the presence of an endobronchial lesion, which might explain the failure of the lungs to ex-

Read before the joint meeting of the North Carolina Surgical Association and Virginia Surgical Society, Hot Springs, Virginia, April 29, 1966.

Request for reprints to 1012 Kings Drive, Charlotte, N. C. (Dr. Taylor).



Figs. 1A-1D

pand and obliterate the pleural spaces. At thoracotomy rather similar findings were noted in all cases. Multiloculated pockets of

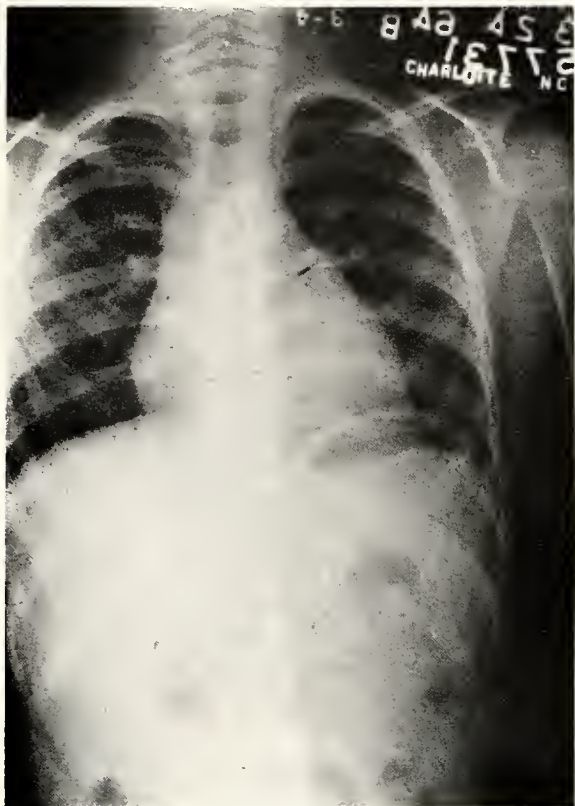


Fig. 1E

Figs. 1A-1E (reading from left to right). Roentgenograms of a two-year-old girl with staphylococcal pneumonia of right lower lobe. (A-D, opposite page, reading from left to right; E, above.)

A. Roentgenogram of the chest obtained March 4, 1963.

B. Roentgenogram made March 12, 1963. Closed tube drainage has been done but the right lung has failed to expand.

C. Roentgenogram taken March 16, 1963.

D. Postoperative roentgenogram made May 8, 1963. At operation the right lower lobe was destroyed by an abscess which had ruptured into the pleural space. Lower lobectomy and decortication of upper and middle lobes produced good expansion of lung.

E. Chest roentgenogram made March 24, 1964, 11 months after operation. The right lung is fully expanded and the patient is asymptomatic.

Figs. 2A-2G (reading from left to right). Roentgenograms of a three-year-old boy with staphylococcal pneumonia of the right upper lobe.

A. Roentgenogram of the chest obtained Dec. 7, 1958.

B. Roentgenogram made Dec. 24, 1958. The right upper lobe is destroyed by a multiloculated lung abscess. The lower lobe is partially collapsed by a localized pyopneumothorax.

C. Postoperative roentgenogram (Jan. 3, 1959) following right upper lobectomy for abscess and decortication of right middle and lower lobes. A large persistent pleural air pocket is present superiorly.

D. A closed-drainage catheter has produced obliteration of most of the air pockets. Patient subsequently had residual emphyema and osteomyelitis of second, third and fourth ribs.

E. (Feb. 7, 1959). The infected ribs have been removed and further decortication done on the underlying lung.

F. Roentgenogram made May 7, 1959, three months after thoracoplasty. Note rapid rib regeneration and pneumatoceles in right middle and lower lobes.

G. Roentgenogram made one year postoperatively. The rib regeneration is almost complete and the pneumatoceles have disappeared.

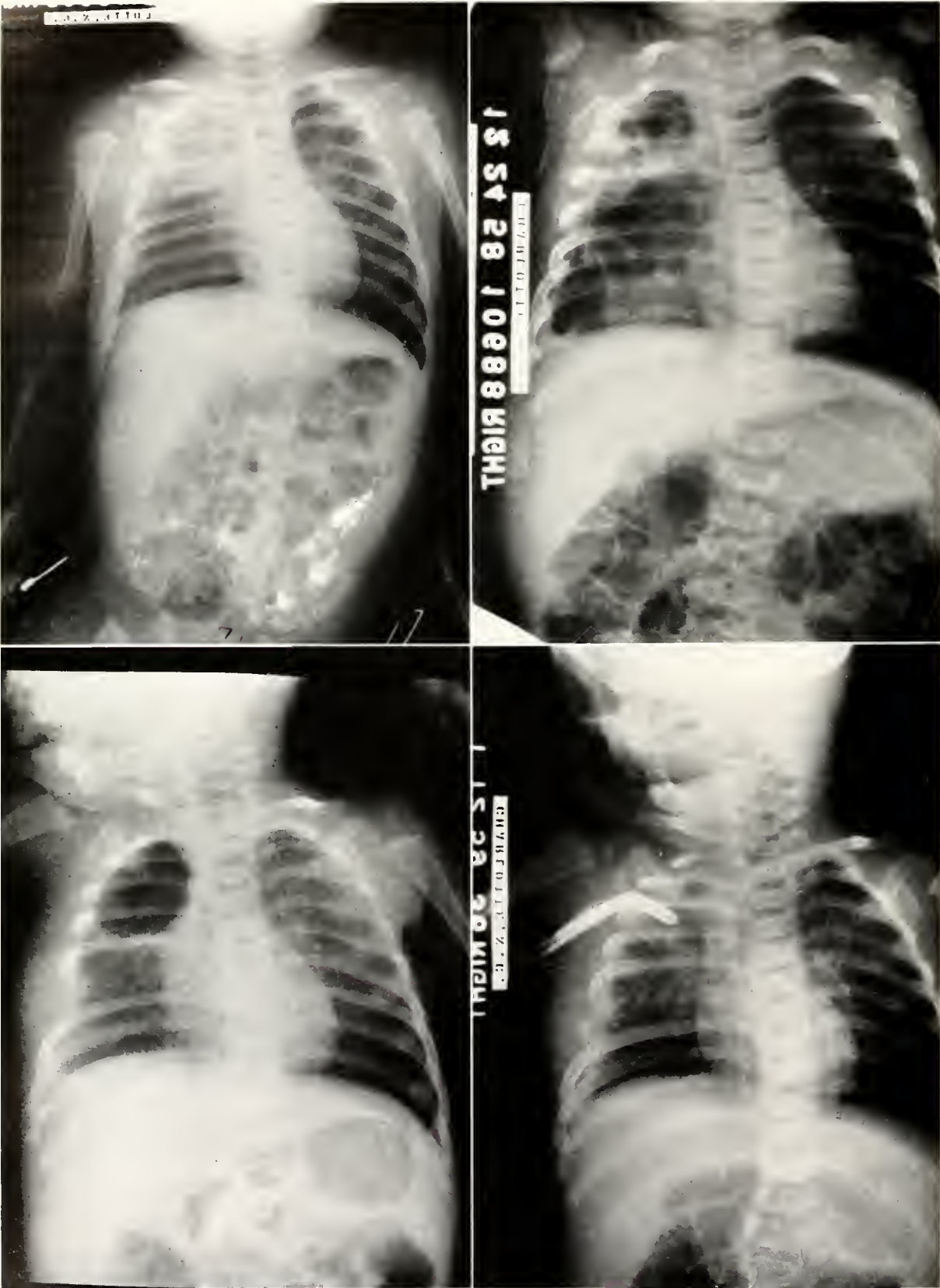
H. Roentgenograms made five years after operation. Note absence of deformity from thoracoplasty.

gelatinous, fibrinopurulent or fibrinous exudate were encountered. The underlying lung was trapped by a peel of this exudate, but decortication was done with ease. Pulmonary resections were required in 16 patients because of solitary abscesses or total lobar necrosis, the latter being a common finding. Thirteen of the resections consisted of single lobectomy (five right upper, four right lower, and four left lower), and three were segmental.

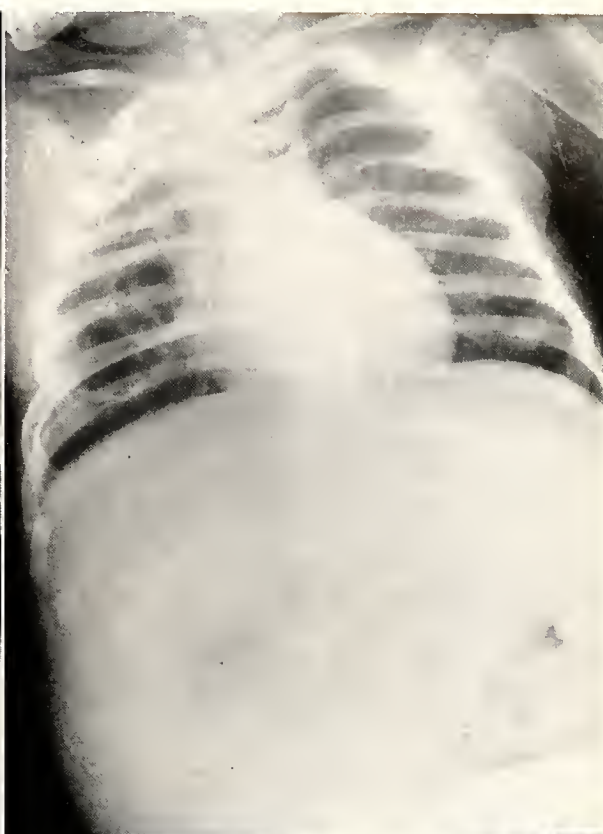
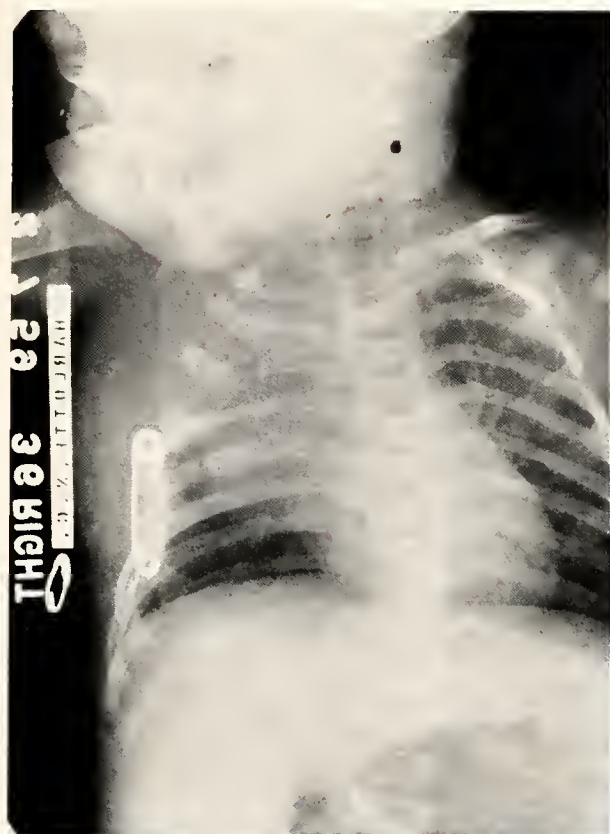
The average postoperative hospital stay for these patients was 11.4 days, although two required a second admission because of complications. Postoperative complications were encountered in three patients. One had atelectasis in a right lower lobe following upper lobectomy. This child required bronchoscopy in addition to the usual nasotracheal suction.

The second complication, a pneumothorax, occurred eight days after the child was discharged from the hospital following a lobectomy. With simple drainage by catheter, the lung promptly re-expanded and remained so. This pneumothorax undoubtedly was due to air leakage from a raw lung surface rather than a blown bronchial stump.

The third complication was residual em-



Figs. 2A-2D



Figs. 2E-2H

pyema that drained spontaneously through the thoracotomy incision, accompanied by osteomyelitis of three ribs. Further decortication and removal of the infected ribs was necessary on a subsequent hospital admission (Figs. 2A-2H).

Discussion

We recognize that most postpneumonic pleural complications in children respond well to conservative measures. Complete recovery can be expected when antibiotics are given promptly in large amounts and when the pleural space is evacuated early by thoracentesis and catheter drainage. When treatment is delayed and antibiotics are given haphazardly and in insufficient amounts, complications which require surgery are common.

It should be noted that 16 of the 20 patients in this series had underlying lung disease which necessitated resection. No child was subjected to thoracotomy because of simple pleural thickening. All of these children had unexpandable, trapped lungs which failed to respond to conservative measures.

Summary

The problems posed by staphylococcal pneumonia in the antibiotic age are described. Twenty infants and children experienced postpneumonic sequelae which, though partially controlled by conservative measures, ultimately required decortication in all cases and lung resections in 16. Early vigorous conservative management of these problems will usually obviate major surgery.

Rehabilitation of the Hemiplegic

JAMES W. GIBSON, M.D.

SALISBURY

Today our country is faced with a growing tide of chronic disease and concomitant disability which threatens to engulf our national life medically, socially, and economically. Paradoxically, we in medicine have caused much of this inundation by reducing infant mortality and death from infectious and communicable diseases, and by improving public health measures, thereby producing an aging population.

Two thousand years ago the average length of life was 25 years. Today it is 67 for males and 72.4 for females, and in a few years it will reach the biblical three score and ten. By 1980 it is expected that the number of persons over 45 years of age will constitute nearly half the population.

Not only do older persons require more medical services, but their medical needs differ from those of younger people. Some idea of the extent of the problem may be obtained from the fact that "stroke" is listed as the third major cause of death, ranking

only behind heart disease and cancer. The majority of patients who sustain a cerebral vascular accident do not die immediately; they improve to a greater or lesser degree and often live a number of years despite their residual disabilities.

Today more and more of the physician's practice consists of the management of physical disabilities resulting from chronic disease, and in this category hemiplegia constitutes the largest single entity.

The rehabilitation of most hemiplegics should remain in the hands of the family physician. He knows the patient not only from the physical standpoint but psychologically and socially as well. With some effort to learn modern rehabilitative techniques, he can manage virtually every one of his stroke patients both to his and the family's satisfaction. To relegate all hemiplegics to a "stroke center" is impossible, and the local physician can and must assume the responsibility.

Early Evaluation

The initial evaluation should include both a "neuromedical" and a functional examina-

From the Veterans Administration Hospital, Salisbury, N. C.

Request for reprints, Veterans Administration Hospital, Salisbury, N. C.

tion. On hospital admission the type and severity of the stroke should be determined. The following are some of the questions posed at the bedside of a hemiplegic:

Is the patient conscious? What is his mental status? What is his general physical condition, and does he have a predisposing disease, such as hypertension and diabetes? Is the stroke due to thrombosis, hemorrhage, or embolus? Is extracranial vascular disease present, *i.e.*, carotid stenosis or occlusion?

Is the patient aphasic? Can he move the affected parts of his body at all? (If so, this is a good prognostic sign.) Does he have bowel and/or bladder incontinence? Can he talk, sit up, or drink from a glass by himself?

On the basis of the initial findings the physician should begin to plan his rehabilitation program at this moment. Along with appropriate medical measures, early physical treatment should begin within 48 hours.

Preventive Measures

A stroke patient is either going to live or die. The institution of techniques to prevent deformities will not harm the sickest patient. Even a patient requiring an oxygen tent should have written orders to include the following:

Proper bed-positioning

The cardinal points of correct bed positioning include a firm mattress with a footboard to keep the bedclothes from pressing on the toes. A pillow in the axilla will prevent adduction deformity of the shoulder. Sand bags or rolled towels will keep the paralyzed extremity from rolling into external rotation. A "comforting" pillow beneath the knee when the patient is supine should be forbidden since this invites flexion contractions at both the hip and the knee.

The bed itself should be low. As the patient becomes aware of his surroundings a high bed tends to instill a fear of falling and insecurity. Later, when he is able to sit on the side of the bed, he should be able to place his feet on the floor, for both the strong feeling of security and the stimulation of proprioceptive sensation which contact with the floor engenders. Transferring from the bed

to a chair is much easier when both are approximately the same level.

The patient's position should be changed every two hours. For the side position, he should be rolled onto his "good" side for stability and the affected arm placed on a pillow. A pillow between the knees in this position adds comfort and stability.

Range of motion exercises

Passive exercises involving all the joints of the affected extremities should be performed by a therapist, nurse, or a member of the family. These measures will prevent tightness and contractures as spasticity sets in. Shoulder abduction and heel cord stretching are especially important.

Activities of Daily Living

The progress that a stroke patient makes in the early stages is directly proportional to the activities that he is allowed to do for himself. He will deteriorate rapidly, both physically and mentally, the more he is waited upon. Self-care activities such as brushing the teeth, combing the hair, shaving, dressing, and eating should be done by the patient just as soon as he can manage them. The performance of these activities is the result of a teaching program directed toward independence; it does not just happen without help and encouragement. Well meaning hospital staff and relatives should not do anything for the patient that he can do for himself. For example, the bedside table should be placed at his "good" side so he can reach articles without help.

Bowel and Bladder Incontinence

Bowel incontinence lasting more than three to four weeks after a cerebral vascular accident is a poor prognostic sign. If it is not due primarily to severe brain damage, a simple retraining program is instituted. A glycerine suppository is inserted in the rectum immediately after breakfast. Ten minutes later the patient is placed on the toilet where he usually needs to remain no longer than 20 minutes. A glass of prune juice just before sleep has been found to be an effective aid in bowel retraining. Early use of a bedside commode is preferable to attempts to use a bedpan.

Contrary to bowel incontinence, urinary incontinence is not in itself a poor prognostic sign. Experience has shown that many hemiplegic patients regain bladder control when they are able to stand or walk. Some degree of urinary incontinence may be the result of prolonged catheterization of patients whose bladders were distended immediately after the stroke. Like the muscles of the extremities on the affected side, the musculature of the bladder may gradually become spastic. Continuous open drainage may contribute to the production of a small spastic bladder which will present problems in retraining when the catheter is removed. To prevent this from happening, a bladder training program is instituted. It consists of clamping the catheter for periods of two hours, then releasing the clamp while encouraging the patient to void. An ample fluid intake should be maintained. The time interval is increased to four hours. The catheter is removed in a few days and spontaneous voiding is encouraged. When the amount of residual urine is small, the catheter is left out. It is not unusual for an elderly patient with prostatic hypertrophy to develop urinary retention after a stroke. Therefore, every hemiplegic deserves an investigation of the urinary tract.

Exercise Program

An exercise program for the hemiplegic is based on day-to-day findings on physical evaluation. The most important obstacle for the physician to overcome is his own tendency to underprescribe exercises. This is understandable since it is inherent in his training to be cautious. However, getting a hemiplegic out of bed and into a rehabilitation program is just as important as the early mobilization of a surgical patient. If the physician is timid about pushing an exercise program, this attitude is communicated to the therapists and other personnel. Most hemiplegics can be exercised to the point of tolerance without danger. Breaking the program down into three periods daily improves the desired tolerance.

Two booklets, "Strike Back at Stroke"¹ and "Up and Around"² graphically illustrate exercises which can be prescribed according

to the individual needs of each hemiplegic. Every physician should become familiar with the material in these booklets. With these aids he can teach nurses and family members how to conduct a progressive exercise program.

Strengthening exercises for the uninvolved extremities should be included since these limbs will probably serve as the patient's "good side" for the rest of his life.

Since flexor movements are usually strong in the average hemiparetic upper extremity, most patients should have exercises to increase the power and dexterity of the finger, wrist, and elbow extensors. It can be seen that giving the patient a ball to squeeze strengthens the wrong muscles. Shoulder abduction is often weak and power-building exercises serve not only to maintain a normal range of motion and to exercise the involved shoulder, but also provide excellent strengthening exercises for the good arm.

The patient himself can be taught to use the strong side of his body to help exercise the weak side. The affected arm should not be ignored even if it appears not to be responding to treatment. Passive exercises should be continued to prevent the range of motion from becoming painfully restricted.

Ambulation

The patient should be cranked up in bed to a sitting position and as soon as possible assisted to a bedside chair for increasing periods. Standing, with assistance, is encouraged, progressing to gait training between parallel bars. The patient should lean towards his good side and practice balance by shifting his weight from one side to the other. Since in most hemiplegics spasticity develops in both the upper and lower extremities, the spastic calf muscles make it difficult for these patients to walk without stretching the heel cord, thereby evoking clonus. They therefore adopt a reflexively conditioned external rotation of the involved hip. This produces a stable gait, and time should not be wasted in attempting to overcome the limp.

After the patient demonstrates proficiency between the parallel bars, he may graduate to a cane. Even if he is eventually able to

walk without it, he should be urged not to discard the cane, because it gives him additional proprioceptive information via his good upper extremity. Because his sense of balance may be disturbed, a cane may help to prevent a fall and possibly a broken hip.

Bracing

About one third of all hemiplegics do not have spontaneous recovery of the dorsiflexors and evertors of the foot. They demonstrate a typical equinovarus deformity which requires a short leg brace to keep the involved foot at a right angle to the shin. The prescription for a short leg brace includes double bar stainless steel uprights, a calf band, anatomical ankle joint, 90-degree ankle stop, and an outside pullover strap to compensate for the peroneal palsy. Flat interchangeable channels in the shoes will allow the patient to wear a different pair with different costumes. Very few hemiplegics require a long leg brace. Those with marked weakness, enough to need heavy bracing, will not be able to walk satisfactorily.

For some hemiplegics as much as 40% of the energy expended in laborious walking may be saved by wearing a short leg brace. The protection afforded the cardiovascular system in such instances is obvious.

Self-Help Devices

While spasticity will develop in the involved extremities of most hemiplegics within a few weeks, in certain other cases flaccidity lasts for months or even years. Here, it is important to provide a sling support for the arm in order to prevent subluxation of the shoulder joint. This painful and disabling complication can be prevented by a properly fitted hemiplegic sling which suspends the upper extremity in such a fashion as to distribute its weight over the back and shoulders.

Numerous devices have been adapted to the needs of the person with only one functional extremity. Among them are a foot-square board with a nail driven in the center on which to impale potatoes, apples, etc., so they can be peeled or cut with one hand; a partitioned plate with a built-up handle for easy grasping; a miniature vacuum clothes

cleaner; a playing card holder, and an electric razor.

Speech Evaluation and Treatment

The patient with hemiplegia on the right side resulting from a cerebral vascular lesion on the left often has a residual speech defect. Aphasia is the relative inability to communicate, the degree and type depending on the site and extent of the vascular lesion. As soon as the condition is detected, the physician should reassure the patient and his family that he is not "crazy." To the hemiplegic patient the lack of speech is probably the most catastrophic effect of his stroke. Attempts to communicate by nonverbal means—sign language—should be started early and continued.

For clinical purposes the evaluation of the hemiplegic with aphasia is fairly simple. In general, the forms of aphasia may be classified as expressive, receptive, mixed, and global.

In expressive aphasia the patient's comprehension of speech is largely intact; however, he has lost the ability to speak normally and has retained only a few stereotyped expressions. There are all degrees of expressive aphasia; in mild cases it may be limited to the inability to speak multisyllable words. Difficulty in talking is usually accompanied by approximately the same degree of disturbance in writing—known as agraphia. The expressive aphasic is usually able to read printed words aloud and has little difficulty in silent reading.

Receptive aphasia involves the loss of comprehension; the patient does not understand what is told him by others. He may "talk" a great deal, but his speech doesn't make sense. Gibberish is a common phenomenon in this type. The patient may repeat words and even utter phrases without knowing what he has said. Perseveration, the repetition of an expression again and again, is common in severe cases.

Mixed aphasia combines both the expressive and receptive forms in varying degrees. Usually either the expressive or receptive features dominate the picture.

In global aphasia virtually all ability to communicate is lost. This condition is found

in patients with severe organic brain damage.

Dysarthria is a speech defect similar to aphasia and mimicking it in many ways. Dysarthria is difficulty in articulation due to damage to parts of the brain concerned with control of the nerve supply to the muscles involved in speech. The dysarthric patient has no difficulty in understanding spoken language, nor does he have expressive aphasia. In its severe forms, however, dysarthria can be very disabling as far as communication is concerned.

All hemiplegics with aphasia should have an evaluation and an attempt at speech retraining. It has been found that in the absence of a qualified speech therapist, a school teacher, preferably of the lower grades, makes a satisfactory substitute when given the proper instructions, since the primary ingredient of successful treatment is patience on the part of the therapist. An intelligent and persevering member of the family may also do a good job. The booklet, "Understanding Aphasia,"³ and a home instruction manual, "The Aphasia Rehabilitation Kit,"⁴ are invaluable to the home speech therapist.

Home Program

Early involvement of the family in the patient's treatment program is of paramount importance. Nature abhors a vacuum, and when a member is removed from the family group for a period, the vacuum is filled by readjustments in the family way of life, sometimes to the exclusion of the stroke patient. This should not be allowed to happen. Rather, immediately after the stroke, members of the family should be kept abreast of the patient's progress and encouraged to take an active part in his rehabilitation. Specific exercise programs, how to put on and take off a short leg brace, how to encourage and assist ambulation, what daily activities the patient can do by himself and what he cannot do without assistance—all can be learned and carried out by members of the family.

Before the patient leaves the hospital a therapist should visit the home to see what physical modifications may be necessary. A patient who can wheel himself around in a

hospital with its wide corridors and doors may be bound to his bedroom by doors which are too narrow. This problem could be solved by obtaining a junior model wheelchair. Such small items as door thresholds can become major obstacles. On occasions a ramp should be constructed for entrance into and egress from the house. Minor alterations in bathroom facilities can make self-care activities feasible.

Prognosis

We have come to recognize that prognosis depends less upon the extent of neurologic involvement than upon the type and severity of the pre-existing disease process. Other things being equal, the best prognosis for functional recovery will be found in the young patient with a post-traumatic hemiparesis, and the worst prognosis in the elderly person with extensive cerebral arterial insufficiency antedating the development of an acute cerebral infarction. Marked organic brain damage precludes successful rehabilitation.

The cardiovascular status is of paramount importance. Advanced hypertensive encephalopathy by itself carries a poor medical prognosis. Some patients with atrial fibrillation are unable to muster enough energy to learn to walk, nor will he learn to transfer undisturbed. A recent myocardial infarct overshadows all other prognostic considerations arising from a superimposed cerebral vascular accident.

As mentioned earlier, bowel and bladder incontinence are important prognostic factors. Prolonged bowel incontinence is an unfavorable sign, while bladder incontinence is not.

The development of a flexion contracture of the knee is detrimental to functional recovery. A hemiplegic with such a contracture of more than 20 degrees will seldom learn to walk, nor will he learn to transfer unassisted from bed to wheelchair and from wheelchair to toilet. Studies have shown that as many as 60% of the hemiplegics in traditional county nursing homes have such contractures; yet these deformities are most commonly caused by faulty bed positioning

(see "Preventive Measures") and hence are largely preventable.

Intellectual impairment cannot be judged by standard intelligence tests, though these are helpful in some instances as an indication of the degree of brain damage. The day-by-day observations of the physician are generally a good basis upon which to assess intellectual damage and changes in personality which will affect the patient's rehabilitation.

The subject of motivation is greatly misunderstood. The elderly stroke patient is not going to be highly motivated, and the statement that a patient "must be motivated" before rehabilitation can proceed is very wrong. The average hemiplegic will seldom actively express the desire to be rehabilitated, and he may be apathetic in doing what he is asked to do. However, only a small percentage of patients without severe organic damage are really uncooperative. Experience has shown that it is sometimes extremely difficult to tell which patients will make progress on a rehabilitation regimen and which will not. Even experienced therapists are surprised by the progress some patients make after the initial evaluation has predicted a poor prognosis.

Summary

It is estimated that there are well over two million hemiplegics in the United States. Many of these patients can be returned to useful lives through modern methods of rehabilitation.

Deformities can be prevented by instituting proper bed positioning and range of motion exercises soon after a stroke.

Retraining in bladder and bowel functions and activities of daily living; an exercise regimen, attempts at ambulation; all should be carried out by therapists, nurses, and family members under the doctor's supervision.

Every hemiplegic should have a rehabilitation program with realistic goals.

References

1. Strike Back at Stroke, Public Health Service, Division of Chronic Diseases, U. S. Government Printing Office, Washington, D. C.; also distributed by the American Heart Association, New York, N. Y.
2. Up and Around, Public Health Service, Division of Chronic Disease, Public Health Publication No. 1120 (Revised) U. S. Government Printing Office, 1964.
3. Taylor, N. L.: Understanding Aphasia, Patient Publication No. 2, Institute of Physical Medicine and Rehabilitation, New York University—Bellevue Medical Center, New York, N. Y., 1958.
4. Ogg, E.: Rehabilitation Counselor: Helper of the Handicapped, Public Affairs Pamphlet No. 332, New York, 1966.

Transient Rises in Ocular Pressure after Basal Iridectomy

JAMES P. GILLS, JR., M.D.

DURHAM

Transient rises in intraocular pressures after basal iridectomy have been mentioned in papers by Chandler,¹ Schaffer,² and Barkan,³ and are more common than is generally realized. Schaffer observed that the filtration angles were open in four patients he examined. This postoperative elevation in pressure is of considerable clinical significance, since the success or failure of basal iridectomy in controlling glaucoma cannot be defi-

nately ascertained for weeks. In order to determine the nature of the phenomenon, the intraocular pressures following basal iridectomies were recorded and analyzed in 29 glaucomatous eyes.

Methods

At the Wilmer Institute and the Duke University Medical Center, tonometry was performed daily (when possible) in order to record postoperative pressures in 29 eyes following basal iridectomy. Of the 29 eyes, operations were performed on 2 because of chronic angle-closure glaucoma with extensive anterior synechia, and on 2 others because of glaucoma with few anterior syne-

Read before the Section on Ophthalmology and Otolaryngology, Medical Society of the State of North Carolina, Asheville, May 2, 1966.

From the Department of Ophthalmology, Duke University Medical Center, Durham, North Carolina.

Request for reprints to the Department of Ophthalmology, Duke University Medical Center, Durham.

chia. Iridectomy had been performed on 7 of the eyes following attacks of acute angle-closure glaucoma. Prophylactic iridectomy was performed on the remaining 18 eyes because of acute angle-closure glaucoma in the opposite eye, or because the clinical appearance and positive results of mydriatic provocative tests suggested impending angle closure. A positive mydriatic test reaction was defined as a rise in intraocular pressure of more than 8 mm of mercury within two hours after the instillation of a 1% solution of tropicamide (Mydriacyl), provided that significant narrowing or closure of the angle was found on gonioscopy. Two drops of tropicamide were administered at five-minute intervals for a total of three doses (6 drops). Following mydriasis, pilocarpine was instilled in a majority of the eyes, and additional pressures were recorded as the pupil became miotic. Steroid provocative tests were not used. Preoperative tonography was performed on 9 eyes.

In the postoperative period, medication was held to a minimum in order not to influence the natural course of intracular pressure changes following basal iridectomy. It was necessary, however, to administer the following medications in the first two weeks after operation: pilocarpine on 15 occasions, epinephrine on one occasion, and tropicamide on 10 occasions.

The intraocular pressures were obtained by applanation and Schiotz tonometry. All intraocular pressures above 20 mm of mercury were considered elevated for the purposes of this study. During the transient rise in intraocular pressures tonography was performed on 5 patients and gonioscopy on 12. Postoperative tonography was performed from two to five months after the operations on 11 eyes.

Results

Sixteen of the 29 eyes studies following basal iridectomy had transient rise in intraocular pressures. The intraocular pressures were highest in the first two weeks following the operation, whether they returned to normal or not. Line graphs (Figs. 1 and 2) show the intraocular pressures of a representative sample of the eyes studied.

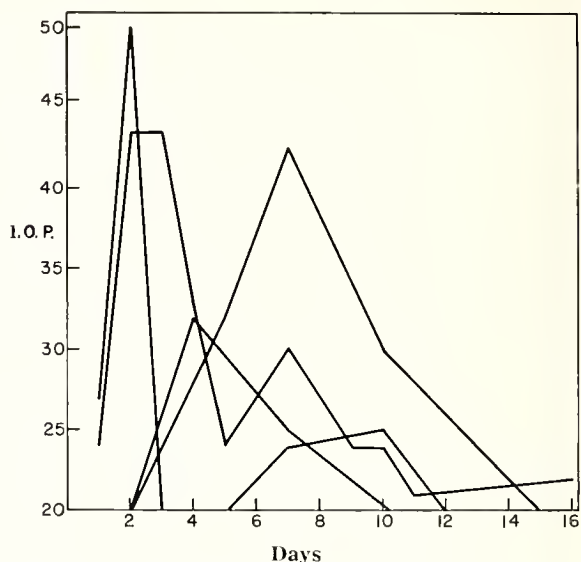


Fig. 1. Five examples of intraocular pressure following prophylactic iridectomy.

Tonography was performed on 5 patients during the transient rise in intraocular pressures. The facility of outflow was markedly decreased from a mean of 0.135 preoperatively to 0.05 during this period. Two to three months after the operation the facility of outflow returned to a mean of 0.17. The angles were found to be open in the 12 patients examined gonioscopically. The rises usually occurred before the third postoperative day, but occasionally as late as the second week. Rises after the second week would suggest trabecular glaucoma. The mean duration of intraocular pressure elevation was 10.6 days. In one eye the elevation persisted for six weeks.

Among 4 patients with chronic angle-closure glaucoma, 1 experienced a postoperative rise in intraocular pressure. This patient, who had peripheral anterior synechiae, required medication before and after operation. The pressure in this eye was uncontrolled preoperatively with the administration of pilocarpine (4% q. x 15 minutes), and was controlled postoperatively by epinephrine HCl (2% twice daily). Tonography revealed:

Preoperatively	C=0.10 (T=28)
During transient pressure rise	C=0.04 (T=40)
Two months postoperatively	C=0.12 (T=16.2)

Five of the 7 eyes with prior episodes of

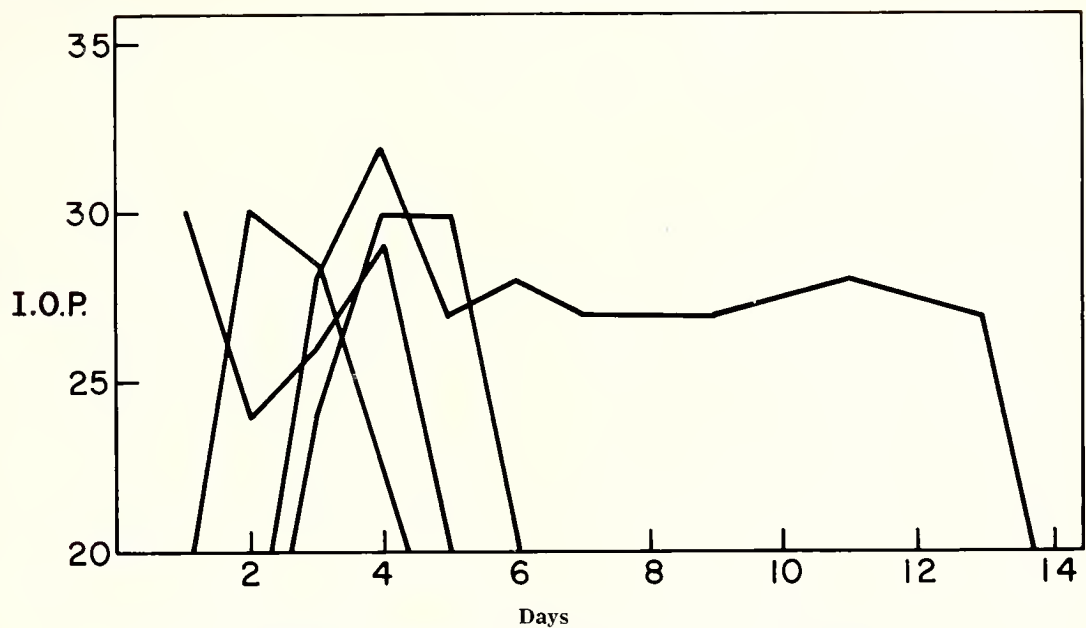


Fig. 2. Iridectomy following acute glaucoma: the intraocular pressure.

acute glaucoma manifested a transient rise in intraocular pressure following basal iridectomy. Pressures in all 7 eyes were controlled by the operation. In one case of acute glaucoma the following was noted:

Preoperatively	C=0.04 (T=43)
During transient pressure rise	C=0.04 (T=30)
Three months postoperatively	C=0.20 (T=12.5)

In 10 of the 18 eyes undergoing prophylactic iridectomy there was a transient rise in intraocular pressure. In 7 of these eyes medication was needed for postoperative control, a fact which in part may be related to preexisting trabecular obstruction (combined glaucoma). In 1 of the 3 companion eyes to eyes with acute glaucoma, a one-day transient elevation in intraocular pressure occurred after iridectomy. Iridectomy lowered the intraocular pressures in 14 of the 18

eyes, but in 4 of these, medication was later needed to control the glaucoma. The remaining 3 eyes with narrow-angle glaucoma were no easier to control following operation. The temporary elevations in intraocular pressure following prophylactic iridectomies and iridectomies for acute glaucoma were comparable. After iridectomy for acute glaucoma the peak mean was 33.6, and after prophylactic iridectomy 32.9.

In 2 patients undergoing prophylactic iridectomy the following changes were noted:

	Patient No. 1	Patient No. 2
Preoperatively	C=0.14 (T=24)	C=0.26 (T=17)
During transient pressure rise	C=0.05 (T=32)	C=0.08 (T=27)
Postoperatively	C=0.18 (T=17)	C=0.22 (T=19)

Medications used during the transient rises in intraocular pressures (pilocarpine, 3

Table 1
Transient Ocular Pressure Rises Following Iridectomy in 29 Eyes

Indication for Iridectomy	No. Cases	Control of Glaucoma	Transient Rises in Ocular Pressures
Chronic closed-angle glaucoma	4	4 (1*)	1
Acute closed-angle glaucoma	7	7	5
Prophylactic iridectomy	18	14 (4*)	10
Total	29	25 (5*)	16

*These eyes were easier to control but required medication.

cases; epinephrine, 1 case) were effective. In two other cases, the intraocular pressure rose after the administration of tropicamide (Mydriacyl). In the one eye examined with the gonioscope, the filtration angle was found to be open.

The rises in ocular pressure could not be correlated with postoperative anterior chamber reaction.

The intraocular pressures were controlled by iridectomy in 20 of the 29 eyes, and by medication in the remaining 9. Sixteen of these 29 eyes had transient rises in intraocular pressures following the operation.

The mean rise in intraocular pressures was 33 mm of mercury in the nine eyes in which pressures later returned to normal without medication, and the mean was 33.8 mm of mercury in the 16 eyes with a transient rise in intraocular pressures after iridectomy. In 3 eyes the pressures rose to between 41 and 50, in 8 to between 31 and 40, and in 5 to between 21 and 30.

Comments

Transient elevations of intraocular pressure following iridectomy have been observed by Chandler,¹ Schaffer² and Barkan.³ Gonioscopy was performed by Schaffer on 4 eyes with transient rises in intraocular pressures following prophylactic iridectomy; 12 of the eyes in this study were so examined. In none of the eyes (Schaffer's 4 and 12 in this study) was closure of the filtration angle or closure of the basal iridectomy found on gonioscopic examination during the rise in intraocular pressure.

The facility of outflow was studied in 5 of these cases during the transient rise in intraocular pressure, and the mean value was $C=0.05$. In 4 of these eyes, outflow values were available for both the pre- and post-operative period. The values showed a marked

decrease in facility of outflow during the postoperative elevation in intraocular pressures. There was a decrease in the facility of outflow of 4 eyes from a mean of 0.135 to 0.05. Two to three months postoperatively the facility of outflow was within normal range as the eyes returned to normal.

These findings suggest that the increase in intraocular pressure is not related to blockage of the trabecular area by the iris, but is due to trabecular obstruction of aqueous outflow. This postoperative rise in pressure following iridectomy is similar to that noted after cataract extraction (Kirsh⁴). Following operation the secondary aqueous obstructs the trabecular meshwork. These postoperative changes resolve with time as the eye returns to normal.

The transient elevations in intraocular pressure prevented final evaluation of the effects of basal iridectomy for several weeks following surgery. The phenomenon occurred following 55% of the iridectomies studied.

Summary

Intraocular pressure rose in 16 of 29 eyes (55%) soon after basal iridectomy. The mean duration of the elevation was 10.6 days (median 8 days); the mean peak pressure was 33.8 mm of mercury. This phenomenon is clinically important because of its frequency and because it prevents the effect of basal iridectomy from being known for weeks.

References

1. Chandler, P. A., and Trotter, R. R.: Angle-Closure Glaucoma: Subacute Types, *Trans Amer Ophthal Soc* 52: 267-290, 1954.
2. Shaffer, R. N.: Discussion of Chandler, P. A., and Trotter, R. R., *Op cit*.
3. Barkan, O.: Iridectomy in Narrow Angle Glaucoma, *Amer J Ophthal* 37: 504-519 (April) 1954.
4. Kirsch, R. E.: Further Studies in Glaucoma Following Cataract Extraction Associated with the Use of Alpha-Chymotrypsin, *Trans Amer Acad Ophthal Otol* 69: 1011-1023, 1965.

Were fermented liquors faithfully prepared, kept to a proper age, and used in moderation, they would prove real blessings to mankind. But, while they are ill prepared, various ways adulterated, and taken to excess, they must have many pernicious effects.—William Buchan: *Domestic Medicine, or a Treatise on the Prevention and Cure of Disease by Regimen and Simple Medicine*, etc. Philadelphia, Richard Folwell, 1799, p. 64.

Ascariasis Complicating a Gunshot Wound:

Case Report and Review of the Complications of Ascariasis

GEORGE PODGORNÝ, M.D.

WINSTON-SALEM

Although it is universally agreed that the most common helminthic infection in man is ascariasis, not much is written about it these days. Particularly in the United States, this disease is receding into oblivion, and the medical profession has assumed a benign tolerance toward it. Nonetheless, it is a fact that ascariasis can attain dangerous proportions and cause many unsuspected complications. Obviously, the treatment of choice is one of the widely used vermifuges. Very rarely an ascaris has been destroyed by gunfire. Recently, exactly such a case was encountered at the North Carolina Baptist Hospital.

Case Report

Late in the afternoon a three-year-old Caucasian boy was apparently playing outside his home when somehow a loaded .22 caliber pistol appeared in the hands of one of his playmates. The pistol was accidentally discharged, wounding the little boy. He was rapidly transported to an emergency room, where examination showed a small entry wound in the right upper part of the chest, just beneath the clavicle, and an exit wound in the left lower quadrant of the abdomen. The patient was in a mild state of shock and had decreased breath sounds in the right side of the chest, absence of peristalsis, and abdominal tenderness. The initial clinical impression was right-sided hemopneumothorax and perforation of abdominal viscera. X-ray examination substantiated the presence of a hemopneumothorax on the right and also free air under the diaphragm.

Routine measures were initiated to treat the shock. A chest tube was inserted into the right pleural space and some blood was evacuated. A nasogastric suction tube placed in

the stomach yielded no blood. Rectal examination was also negative. Routine questioning of the mother failed to reveal any important facts in the child's medical history.

As soon as the general condition of the child was stabilized he was taken to the operating room for an exploratory operation. The bullet had entered the right upper portion of the chest, traversed the right lung, come through the mid-portion of the right hemidiaphragm into the liver, through the gallbladder, through the most dependent portion of the greater curvature of the stomach, and the transverse colon, and finally emerged through the left lower quadrant of the abdomen. Perforations in the stomach and the diaphragm and liver were sutured. A cholecystectomy became necessary.

The most unexpected finding was made while the small intestine was being examined and palpated. Numerous long cord-like structures were felt throughout the entire length of the small bowel and proved to represent a massive ascaris infestation. One of these ascarides was lodged in the vermiform appendix and was gently nudged out by pressure. An appendectomy was then performed without difficulty. While examining the two perforations of the transverse colon, an ascaris was found practically cut in half by the bullet. Both portions of the worm were removed, and the perforations in the colon were repaired. No other dead helminths were found.

After the operation the child improved rapidly and eventually was discharged. The presence of massive ascariasis presented a considerable challenge. It was elected not to disturb the worms, and no vermifuge was administered. During the week of hospitalization following the procedure only one worm was found in the child's stool. On several occasions the differential white blood cell count showed eosinophilia. The total

From the Department of Surgery, North Carolina Baptist Hospital, Winston-Salem, N. C.

Request for reprints to the Department of Surgery, North Carolina Baptist Hospital, Winston-Salem, N. C. 27103.

eosinophil count was 1200/cu mm. Since discharge the patient has been seen in the out-patient clinic and was doing very well. Three weeks postoperatively the child and his entire family received vermifuge.

Discussion

This case prompted a review of the literature concerning the various unsuspected complications of ascariasis. The number of such complications is surprising.

Ascariasis begins when the fully embryonated eggs are swallowed and pass down the digestive tract to the intestine, where they develop into larvae. The larvae penetrate the walls of the small intestine, enter lymphatics and venules, and are carried through the right side of the heart into the lungs. After several days they break through the pulmonary capillaries into the air sacs and are carried to the bronchioles, bronchi, and trachea. They are swallowed and reach the small intestine, where they develop into adult worms.

In the event of a massive inoculation, these larvae may pass through the left side of the heart and in the process filtrate into the various organs of the body.¹ Various problems can develop, depending on the migratory habits of the larvae and the toxins they produce. The migrating larvae have often been incriminated as the etiologic agents in certain cases of pneumonitis and bronchopneumonia,² and even empyema and pulmonary abscess.³ Decomposition of the products of the ascarides have resulted in many toxic reactions, shown experimentally to be due to neurotoxins and endotoxins produced by the worms.⁴ Von Fellenberg⁵ reported recurring attacks of urticaria in a mother at a time when her son had an ascari infection.

Complications of ascariasis occur not only in the gastrointestinal tract, but also in any other hollow organ of the body. Obstruction of the larynx resulting in suffocation has been reported.⁶ Since ascariasis is more common in children, a greater prevalence of surgical complications would be expected in them; however, these complications are also seen in adults.

Ascarides may enter the biliary and pancreatic ducts, producing obstruction and infection.⁷ It is believed that worms find their way through the papilla of Vater. Stiles⁸ reported finding a female ascaris threaded through the eye of a large shoe button in the intestine and mentioned several similar cases. It was his opinion that these worms have a tendency to penetrate any opening.

An ascaris can coil itself in the common bile duct, thus producing clinical evidence of obstruction of the duct.⁹ Another case reported involved an elderly man with pain in the right upper quadrant of the abdomen. An exploratory operation disclosed 3 liters of bile in the peritoneal cavity. The patient subsequently died and an autopsy disclosed a rent in the hepatic duct through which an adult female ascaris protruded, resulting in escape of the bile. The gallbladder contained seven adult worms and the bile ducts of the liver ten.¹⁰

Hepatic abscesses due to ascariasis are fairly common and usually multiple; the pus is foul.¹¹ These abscesses may rupture into the peritoneal cavity¹² and occasionally into the thorax.¹³

Some of the most common surgical problems encountered are intestinal obstruction and intussusception. Ascarides may accumulate and become entangled to form a bolus, resulting in partial or complete mechanical obstruction; this condition is usually seen in the terminal portion of the ileum. There is no adequate explanation for the formation of the bolus. Intussusception has been associated with the presence of one or more worms, and some authorities believe that the irritating effect of the worms stimulate hyperperistalsis and may be the initiating factor in the production of intussusception.¹⁴ Ho-Dac-Di¹⁵ reported a case of acute intestinal obstruction; at enterotomy 1000 worms were removed and more were later recovered by mouth and by anus.

Recently, Wong¹⁶ reported four cases of intestinal obstruction due to ascariasis in children. Two of these cases simulated intussusception and the real cause was not learned until the actual time of surgery. All of these cases involved the distal ileum. In

each case he found some 60 to 80 ascarides. In one of his cases, he was able to reduce the obstruction by gently pushing the worms into the cecum. In another instance he had to open the small bowel to extract the bolus. Two other cases he treated with nasogastric suction and vermifuge.

Perforation can also occur with presence of ulcerative lesions of the large or small intestine with subsequent migration of the worms into the free peritoneal cavity.⁴

It is not uncommon to see ascarides in a suppurative and gangrenous appendix. Ochsner and DeBakey¹ reported a case of a young man who had acute appendicitis; at the time of surgery an adult ascaris was protruding through a perforation of the vermiform appendix. Dietrick¹⁷ recently reported a case of a ruptured appendix, in which operation disclosed an appendiceal abscess containing four live adult worms.

Postoperatively many problems may be encountered in a patient who has had massive ascariasis. Obviously, ascarides can negotiate through an anastomotic site. This will have grave consequence. Often ascarides are found free in the abdominal cavity following trauma or prior surgery.¹⁸ Recently Feuchtwanger¹⁹ reported an unusual postoperative complication in a patient who had undergone vagotomy and gastrojejunostomy. Postoperatively it was noticed that his nasogastric tube could not be irrigated and was completely obstructed. When the tube was removed, an adult ascaris had partially crawled into the opening of the tube.²¹

Summary

Pediatricians and surgeons especially should be alert to the seemingly benign disease ascariasis. *Ascaris lumbricoides* is a formidable worm indeed. It is wise to suspect ascariasis in geographic areas that are known to be economically and otherwise conducive to its presence. If time permits, preoperative diagnostic studies should be performed on such patients. Examination of the stool for ova is often rewarding. Ingestion

of barium often discloses the presence of worms in the intestines.

When ascariasis is found at the time of an abdominal exploration, it is best to leave the worms undisturbed unless they are causing an intestinal obstruction. It is also best postoperatively not to disturb the worms until full recovery and healing takes place. Then a vermifuge should be administered in order to eliminate the worms. Finally, the use of the firearms as a treatment of ascariasis is definitely contraindicated.

References

1. Ochsner, A., DeBakey, E. G., and Dixon L.: Complications of Ascariasis Requiring Surgical Treatment: *Amer J Dis Child* 77: 389-407 (March) 1949.
2. Keller, A. E., Casparis, N. and Leathers, W. S.: Clinical Study of Ascariasis: *JAMA* 97: 302-304 (Aug 1) 1931.
3. Middleton, L. A.: Pulmonary Gangrene With Empyema and Acute Meningismus Due to *Ascaris Lumbricoides*: *Canad Med Ass J* 20: 510, 1929.
4. Girges, R.: Pathologic Factors in Ascariasis: *J Trop Med* 37: 209-213, 1934.
5. Von Fellenberg, R.: Urticaria in Mother Caused by Hypersensitivity to Ascarids of Child: *Schweiz Med Wchnschr* 62: 582, 1932.
6. Dixey, M. B. D.: Case of Sudden Death Due to Occlusion of Larynx by Two *Ascaris Lumbricoides*: *Edinburgh M J* 36: 111, 1929.
7. Brayne, W. F.: *Ascaris* in Bile Ducts: *Brit M J*, 2: 1122, 1925.
8. Stiles, C. W.: *Ascaris Lumbricoides* Caught in the Eye of a Shoe Button: *JAMA* 76: 239 (Jan 22) 1921.
9. Gallagher, W. J.: *Ascaris Lumbricoides* Causing Common Duct Obstruction: *J Missouri M Ass* 27: 170, 1930.
10. Adams, A. R. D.: Ascariasis of the Liver: *Tr Roy Soc Trop Med*: 28: 419, 1935.
11. Sivasambandan, R.: Multiple Abscesses in Liver Secondary to *Ascaris* Infection: *Malayan M J* 3: 101-103, 1928.
12. McNamara, K. N.: Ruptured Liver Abscess and Roundworms: *New Zealand M J* 42: 171-174, 1943.
13. Wyss, H.: Volvulus of the Ileum and Hepatic Abscess From Ascariasis Infection Seen at Operation, *Schweiz Med Wchnschr* 58: 502, 1928.
14. Girges, R.: Pathology and Complications of Ascariasis, *J Trop Med* 37: 296-304, 1934.
15. Ho-Dac-Di and Huyoh-Tien-Doi: A propos d'un cas d'occlusion intestinale causee par 1000 ascaris dont 700 ont etc. retires par enterotomie suivie de guerison, *Presse Med* 43: 629-632, 1935.
16. Wong, W. T.: Intestinal Obstruction in Children Due to *Ascaris* Simulating Intussusception: *Brit J Surg* 49: 300-302, 1962.
17. Dietrick, R. B., Kim, S. K.: An Interesting Complication of Appendicitis: *Va. Med. Monthly* 89: 645, 1962.
18. Cordell, A. R.: Personal communication.
19. Feuchtwanger, M.: An Unusual Postoperative Complication of *Ascaris Lumbricoides*: *Brit J Surg* 49: 456, 1962.

Open Letter to the Nurses of Wake Memorial Hospital

I have been asked to express my personal attitude about the physician-nurse relationship, some of the sensitive areas in the hospital, and how we can improve them.

I have been fortunate enough to enjoy my association with all the physicians I have known since the beginning of my nurses' training, with very few exceptions. I have never felt debased and have always been treated with respect by these doctors. I believe this has been due to their awareness and appreciation of my attitude towards them and their work.

In almost every kind of work that involves more than one person, there is a superior and an inferior role. This is much the same case in the doctor-nurse relationship. The physician is the superior person by reason of his knowledge and responsibility, not blood lines. The only time breeding can be involved is when one of the persons behaves without dignity or courteous regard for the other. I cannot appreciate the nurse that feels she is a "handmaiden" to a doctor when she assists him in his work. If she has a high regard for herself, how can this be possible?

I have often heard the remark, "Doctors don't think we are human." How often do we stop to remember that they are human too? I will mention a few possible situations that might help you see them as "human," as well as some of the traditional things that are misinterpreted as acts of subserviency.

Standing in the presence of a doctor: When a physician comes to the nursing station, the nurse stands. This is a professional act of courtesy. It indicates that she is ready to assist him. When the Director of Nursing comes to your hall the same courtesy should be extended. She, too, is your superior because of greater responsibility. I never hear resentful comments about standing for her, although the same principle is involved. There are many rules of social behavior that are essentially the same. We stand when an elderly person enters the room. A gentleman on a bus stands and offers his seat to a

lady. The person performing such an act is better because of it, and he or she gains the respect of the other person.

The doctor's bad disposition: If a doctor is irritable, why must we automatically decide that it is a personal attack directed at us? We expect him to understand and forgive us for our bad moods. Why expect the doctor to be always happy and smiling? He has many of the same problems that make us irritable.

1. You have to work hours that conflict with something you want to do. They can never count on anything with their families, not even dinner time, unless they make arrangements for another physician to take calls.

2. You become frustrated and grouchy when there is too little help to give good care to your patients, the visitors are swarming like locusts, and it is important that you get off duty on time. How can we expect him to be a ray of sunshine when he has an office full of patients, must leave for an emergency at the hospital, has a family calling him day and night, and he hasn't had a good night's sleep in a week?

3. You have to come to work and leave a sick child or a husband at home. He might have sick people at home, too.

We all need a sounding board occasionally. I have to blow my top to somebody now and then, and frequently it is a doctor who listens. If the doctor uses me in the same way, why should I be offended? If I've done my best and am not the cause of his bad temper, so what? I'm there, and maybe it makes him feel better to bang his head against the wall. If it is my fault, I need to be spending my energy trying to correct the matter or finding some way to avoid repeating my error—not nursing my hurt feelings.

How you say it can make a big difference. We find tactful ways to express ourselves in social relationships. It's just as important to do so in working ones. The doctor understands your meaning just as well as when you make a blunt, thoughtless statement.

When I began my present job we had a very real problem. Ten or twelve doctors

would congregate in the middle of the second floor nursing station to talk and laugh about golf, fishing or to discuss patients. The nurses couldn't get through the crowd, answer telephones, reach the charts, or hear themselves think. I asked all hospital personnel to forbid any person other than a doctor to use the doctor's chart room. A notice was posted on the door, and I notified the surgical staff that the room was going to be reserved so that they would have a telephone and a place to dictate. We have had no further trouble with a crowded nursing station. The surgical staff could see through my stratagem and knew it was my way of asking them to stop crowding the nurses' station. I would not have been successful if I had been less tactful, and I might have gotten some backs up.

Some other examples of a good and a bad way to make a needed comment are:

1. "We haven't got time to take these vital signs every hour when they are stable. Why not say, "His vital signs are stable. Do you want to continue taking them every hour?"

"Tell Dr. Blank he hasn't been to see his patient in three days." Wouldn't it be better to say, "Remind Dr. Blank to see Mrs. Doe when he makes rounds."

"Doctor X said for you to see his patient on medical consultation." It's much nicer to say, "Doctor X would like to know if you can see his patient as medical consultant."

If you listen you'll hear the same thoughtless remarks several times a day.

I don't think all doctors are perfect all the time, but it won't help matters for me to fight with them. I can get my work done better if I can get along well with them. We all gain from pleasant relationships. If you really

work toward this goal, after a while it will be the easiest thing in the world to do. If you let the doctor know that you respect him and are willing to assist him, he will respect you and be willing to help you out.

Behavior around patients. Once you establish a warm relationship with the doctor you must also learn to appreciate the factors that limit or influence it: such as, where you are and who is looking and listening. Lack of consideration for these things will be a barrier to anything more than a very strict professional relationship. If the doctor teases you at the desk, this is not expected to continue at the bedside. Even if he continues it, it is not always appropriate for you to do so. This is because of the patient's reaction. If the doctor teases you, the patient thinks, "That must be one of his best nurses." If you kid the doctor, the patient is apt to think you have no respect for him, and therefore, there must be something wrong with him as a doctor. Human relations are a very subtle business.

Perhaps you have your own method for establishing a good relationship with doctors, and if it gets the same good results, that's fine. I do know that it's worth the effort, if it takes effort, because it makes so much difference in the working day for us and for the physician. If you will try it for a while, I'd be willing to bet that the doctors will be more considerate about writing orders, making rounds, and doing all the other things that can make life easy or difficult for you.

I hope that you will express your own opinions when I talk with you in our in-service program. The purpose of this letter is to try to express my own in a meaningful way.

MAXINE MAURICE, R.N.

Mankind were never intended to weigh and measure their food. Nature teaches every creature when it has enough; and the calls of thirst and hunger are sufficient to inform them when more is necessary.—William Buchan: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicine*, etc. Philadelphia, Richard Folwell, 1799, p. 60.

North Carolina Medical Journal

Owned and published by
The Medical Society of the State of North Carolina,
under the direction of its Editorial Board.

Wingate Memory Johnson, M.D.
Founding Editor (1940-1963)

EDITORIAL BOARD

Robert W. Prichard, M.D., Winston-Salem
EDITOR

John S. Rhodes, M.D., Raleigh
ASSOCIATE EDITOR

Miss Louise MacMillan, Winston-Salem
ASSISTANT EDITOR

Mr. James T. Barnes, Raleigh
BUSINESS MANAGER

W. McN. Nicholson, M.D., Durham
CHAIRMAN

Ernest W. Furgurson, M.D., Plymouth

John C. Reece, M.D., Morganton

Robert A. Ross, M.D., Chapel Hill

Charles W. Styron, M.D., Raleigh

Address manuscripts and communications regarding
editorial matter to the

NORTH CAROLINA MEDICAL JOURNAL

300 South Hawthorne Road, Winston-Salem, N. C. 27103

Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 203 Capital Club Building, Raleigh, N. C. 27602. All advertisements are accepted subject to the approval of a screening committee of the State Journal Advertising Bureau, 510 North Dearborn Street, Chicago, Illinois 60610, and-or by a Committee of the Editorial Board of the North Carolina Medical Journal in respect to strictly local advertising accepted for appearance in the North Carolina Medical Journal.

Instructions to authors appear in the January and July issues.

Annual Subscription, \$5.00

Single copies, \$1.00

Publication office, Progress Printing Co., Inc., Box 175, Fuquay-Varina, North Carolina 27526.

JANUARY, 1967

SUGGESTIONS FOR AUTHORS

The *North Carolina Medical Journal* welcomes original contributions to its scientific pages, expecting only that they be under review solely by this *Journal* at a given time, and that they follow a few simple guidelines. The guidelines are as follows:

1. Subject Matter

Educational articles, especially those in which particular applications to the practice of medicine in North Carolina are developed, are one of the main objectives of this *Journal*.

Articles reporting original work by North Carolina physicians are invited, whether the work is

done in a clinic, a laboratory, or both. The editor and his consultants will evaluate the work by the usual criteria, including a proper discussion of previous work, control observations, and statistical tests where indicated.

Historical articles, especially those dealing with local history, are considered of real value and interest.

2. Manuscripts

An original and a carbon copy of the manuscript should be submitted, one for review by the editorial staff, the other by referees. The manuscript should be typed on standard-size paper, double-spaced, with wide margins (one inch on each side).

3. Bibliographic References

References to books and articles should be indicated by consecutive numerals throughout the text and then typed, double-spaced, on a separate page at the end of the manuscript. Books and articles not indicated by numerals in the paper should not be included, "unless an exhaustive review of the literature has been made on a subject of sufficient importance to warrant such a survey."¹ Such a bibliography is seldom justified.

References will be much more valuable to the reader if they are given in a proper form and contain the full information necessary to locate them easily. The *North Carolina Medical Journal* follows the form used in the journals of the American Medical Association and the *Index Medicus*, giving the author's surname and initials, title of the article, name of the periodical, volume, inclusive page numbers, and the date of publication. It is believed that this style makes it easier for the reader to judge whether the reference is likely to prove useful to him, and enables him to locate it more quickly.

4. Tables and Illustrations

Tables and legends for illustrations should be typed on separate sheets of paper. The illustrations should be glossy black-and-white prints or line drawings. It is necessary to obtain permission from the author or publisher to reproduce illustrations which have been published elsewhere.

The *North Carolina Medical Journal* pays up to \$20 on the cost of cuts for any one article. This amount usually covers the expense of reproducing from two to five illustrations, depending on the size and type of cuts required. Line drawings and graphs are usually less expensive to reproduce than photograph. Authors may publish additional illustrations by paying the extra cost.

The style followed by this *Journal* will be, in general, that outlined in the Style Book issued by the Scientific Publications Division of the American Medical Association, John H. Talbot, M.D., director.

By following the above suggestions, writers will greatly expedite the publication of papers accepted by the *North Carolina Medical Journal*.

1. Fishbein, M.: Medical Writing, ed. 2, Chicago, American Medical Association, 1948.

THE BOREDOM FACTOR IN EXERCISE

During the Kennedy administration physical fitness enthusiasts came into their own, and exhortations along that line continue with little diminution up to the present. The most exhilarated promoters of the vigorous way of life have little patience with mild forms of exercise, regarding them with only slightly less contempt than complete inactivity, which at least has about it an air of defense.

Golf, especially, has taken its share of abuse. Studies of energy expenditure in different sports indicate that golf does not cause an increase over basal levels anywhere near the increase caused by running, for instance. This profundity is taken to mean that if you really want to exercise, don't delude yourself by playing golf; rather go out and run a mile or two each day, rain or shine. Pictures are often shown of various physicians who follow such a regimen, all fine-looking fellows. Most people, however, physicians included, would be bored to tears by the thought of doing all that compulsive running, and might tear themselves down emotionally if they tried such a program and quit after four days. Golf, on the other hand, is an attractive activity in itself. True, it is often humiliating, but that is one of its values. When the player walks, perhaps even carrying his own clubs, there is exercise aplenty, especially on the hilly courses which abound in our state.

Exercise for exercise's sake is never going to appeal to the mass of the people, lay or professional. Exercise for sport's sake will. Our prescriptions along these lines have to take into account the sporting tendency so common in human beings.

* * *

THE SOBRIETY OF JEWS

Many remarks have been made about the fact that from the statistical point of view, alcoholism is not a problem among Jews. Unlike their fellows of the Protestant and Roman Catholic persuasion (and physicians), alcoholics and their families do not occupy significant segments of the time of rabbis. One wonders why this happy situation exists.

A sampling of rabbinical views on the matter is interesting. Perhaps, it has been suggested, Jews do not drink to excess because they associate alcohol with religious observances within the family circle. Every Friday night, as the Sabbath begins, a ceremonial glass of wine is taken by the family at the evening meal. On the great religious holidays similar use of wine is practiced. Or it may be that the almost universal Jewish respect for mental ability and education is incompatible with the dulling of these aspects of personality that accompany depression by alcohol. Since it is rather difficult to work long and hard virtually every day of the year, as did the Jews of Europe's ghetto and those of their original agrarian society in the Middle East, and still find time for drinking, it may be that those with a taste for the sauce have been eliminated by natural selection.

Humorous though it may seem, one rabbi may have hit on the real secret when he remarked that the first taste of alcohol a Jewish boy gets is when he is circumcised. This might well be enough to condition him against carrying his contact with alcohol too far.

* * *

THE INSPECTION LAW AND NORTH CAROLINA MOTOR ACCIDENT MORTALITY

Buxbaum and Colton, writing in the *JAMA* (197:31-36, July 4, 1966), compared the 1960 motor vehicle mortality among men aged 45 to 54 in states with and without motor vehicle inspection. They found inspection associated with a lower mortality, an association which held up even when the effects of geographic variation, per capita income, and a variety of miscellaneous factors were taken into account. The only departure from the pattern was elevation of the death rate for nonwhites in middle-income states without an inspection law. It was also noted that in states where vehicles were inspected twice a year as compared with a single yearly inspection, the death rates were lower still. In all comparisons, the nonwhite death rate was higher than that of the white population, usually 50% or more.

Since 1966 North Carolina has joined the ranks of the states with inspection laws, although our law does not require an inspection as stringent or as often repeated as some safety advocates wanted. Should our experience prove to have a favorable effect on our death rate, there will no doubt be additional attempts to make the law more strict, and to inspect items like tires, which are presently ignored. Anyone who has had a car inspected in places like New Jersey or the District of Columbia, where the inspection is done in state-operated inspection lanes, realizes that our practices are lax by their standards. However, the realistic person also knows that getting the law we have was a considerable achievement on the part of the legislators and the Governor. What happens next will largely depend on the public's experience with the inspection process itself and on the accident mortality rate. A reduction in insurance premiums as the result of favorable experience would favor even more the chance of inspection law improvement, but no doubt is a millennial thought.

* * *

SOME GOOD EFFECTS OF BAD WOMEN

Physicians whose advice is sought in regard to marital problems often hear that a man's career is allegedly being retarded in its development by some deficiency in the wife. Rarely does one hear of the reverse effect, although the history of medicine offers some examples suggesting that an unfortunate association with a woman led to good ends.

The prime example, perhaps, is the case

of Claude Bernard, widely considered the guiding spirit of modern physiology. This great man—who gave us such discoveries as the demonstration of hepatic glycogenesis, the role of the pancreas in digestion, and most important, the principle that the internal environment tends to remain stable and independent of external factors—was sore beset in his married life. A sensitive man who had started a career as a playwright, Bernard was not in sympathy with his wife's social ambitions. She hounded him to the point where they became estranged, and finally, legally separated. Who is to tell but that her personality made home so unpleasant that he found the laboratory much more congenial? Perhaps a pleasant marriage would have led him to spend more time in social pursuits and denied the world some of the scientific output of his genius.

In another relationship, Galen, greatest figure of Roman medicine, had a mother whose irascibility he himself compared to that of Xanthippe, Socrates' wife. As a consequence of his mother's bad temper, Galen was drawn to his father, an architect of considerable intellectual accomplishment, who guided him into philosophical studies and finally into medicine. Had their relationship been more casual it is hard to say what course his life would have taken.

Looking at one's own contemporaries with thoughts concerning the value of unpleasant females, many examples can be found of men with ordinary endowments who have achieved more than ordinarily in their profession by virtue of devoting more than the usual time to it. It is, however, unwise to point this out in specific cases, or even to mention it around the house!

... cheerfulness and mirth quicken the circulation, and promote all the secretions; sadness and profound thought retard them. Hence even a degree of thoughtfulness is necessary to health. The perpetual thinker seldom enjoys either health or spirits; while the person who can hardly be said to think at all, generally enjoys them.—William Buchan: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicine*, etc. Philadelphia, Richard Folwell, 1799, p. 56.

The President's Message

THE APPALACHIAN REGIONAL PROGRAM

Appalachia is that land God created with loving care; the land that man did rape and then both God and man forgot."

Anon. 20th Century

This poignant definition of Appalachia by some unknown person, possibly an expatriate, painting a picture of a never-never land ravished and forgotten, is not true. The Appalachian Highlands have been defined by nature as an area of low, eroded mountain ranges and plateaus dissected by narrow winding valleys extending from upper Alabama to lower New York State. The length is approximately 900 miles, and the breadth varies from 250 to 400 miles.

As one who lived for a part of his early life in Appalachia, I cannot subscribe to some of the conclusions drawn as a result of a demography of the region. Socioeconomic conclusions can be postulated upon the desire of any individual extrapolator.

What are the developments in Appalachia that are of current interest to the physician in caring for those people who have their habitat there?

A discussion of the whole of the Appalachian region is not the purpose here. The intent and purpose of federal programs involved in the implementation of the Appalachian Regional Development Act of 1965, as they refer to the health field, are of manifest interest to physicians.

The purpose of this article is to acquaint physicians with certain data regarding the Appalachian Regional Program. To define the program, to interpret the law, or to include encompassing statements of opinion is beyond the intent of the presentation. A report of the Health Advisory Committee to the Appalachian Commission itself totals 237 pages. Therefore, only the highlights can be touched upon.

Three sections of Public Law 89-4 (the Appalachia Act) are particularly applicable to health care—namely, sections 202, 212, and 214. Public Law 89-4 was enacted for

the stated purpose of promoting the economic development of the region and, in coordination with the respective state and local governments, of attempting to solve problems that exist and develop certain basic facilities which would be essential to economic growth. The act proposed that efforts would be concentrated in areas which have significant potential for future growth.

Section 212, like Section 214, presents programs that are not new. Section 212 authorizes up to six million dollars for the construction of facilities to assist in the prevention of pollution of streams. Section 214 authorizes the Secretary of Commerce to allocate funds for the purpose of increasing federal contributions above the current fixed matching formula up to a maximum of 80%. This part is important in connection with the construction of medical facilities under the Appalachian Act. Section 202 involves in many ways the physician and the other purveyors of health care.

After the enactment of P. L. 89-4, concern arose as to the proper interpretation of the act and as to how the authorized funds could be properly allocated in terms of health care returns on investment. To this end, a Health Advisory Committee to the Appalachian Regional Commission was set up. The governors of the 12 states involved were requested to appoint one representative each from their states. Twelve federal representatives were also appointed.

As of November 10, 1966, the governors' appointees group was made up of seven upper echelon state health officers, three persons in the field of education, and one from hospital administration. The one vacancy (North Carolina) is due to the recent elevation of Dr. Jacob Koomen, North Carolina State Health Director, to the chairmanship of the Advisory Committee. Governor Moore of North Carolina will undoubtedly fill this vacancy soon. The separation of the alignment of this sector of the committee is done here to show that not one physician in the

field of private practice of medicine has been appointed by the 12 governors so far. In the twelve-member federal Co-chairmen's group, there are, however, physicians from the private practice field.

H. C. Huntley, M.D., M.P.H., staff member of the Appalachian Regional Commission, discussed the medical program of the Commission in March of 1966 at Pine Mountain, Georgia, at a sub-regional conference. Dr. Huntley spoke of the original Hill-Burton Act proposing the concept of regionalization of health care and stated that "even before this and continuing up to the present day, leaders in medical care administration have recommended strongly group practice . . ." He went on to say that utilization of larger numbers of technicians and assistants would enable the physician to extend his resources, etc. It is suspected that when Dr. Huntley used the phrase "group practice," he had in mind the so-called multi-discipline health team approach rather than the average physician's concept of group practice.

The Health Advisory Committee began to establish certain criteria which they felt would improve the delivery of efficient health care and services as follows:

The delivery of these services should be so organized as to encourage development of a continuing relationship between the patient, his physician, and the other professional and supporting health personnel concerned with the direct provisions of services. To achieve this goal, it will be necessary to encourage the full use of existing resources supplemented when necessary by coordinated additional public and private resources.

The definition of comprehensive health services was later modified and refined to read as follows:

[Comprehensive health services for individuals and families include these essential components: health education, personal preventive services, diagnostic and therapeutic services, rehabilitative and restorative services, and community-wide environmental health services.] Comprehensive health services should be readily accessible on a continuously available basis. Frequently needed ongoing services should be adapted to each individual's physical and social environment. The emphasis should be on the continuing care of persons rather than on episodic treatment of categorical diseases.

The delivery of these services should be so organized as to encourage development of the continuing relationship between the patient, his physician, and other professional and supporting health personnel concerned with the direct provision of services.

Section 202

It would seem that the next step in a presentation of the plan would be to determine the mechanism of funding a comprehensive program. The Act provides for this in Section 202, entitled Demonstration Health Facilities."

Sec. 202. (a) In order to demonstrate the value of adequate health and medical facilities to the economic development of the region, the Secretary of Health, Education, and Welfare is authorized to make grants for the construction, equipment, and operation of multicounty demonstration health facilities, including hospitals, regional health diagnostic and treatment centers, and other facilities necessary to health. Grants for such construction (including initial equipment) shall be made in accordance with the applicable provisions of title VI of the Public Health Service Act (42 U.S.C. 291-291z) and the Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963 (77 Stat. 282), without regard to any provisions therein relating to appropriation authorization ceiling or to allotments among the States. Grants under this section shall be made solely out of funds specifically appropriated for the purpose of carrying out this Act and shall not be taken into account in the computation of the allotments among the States made pursuant to any other provision of law.

(b) No grant under this section for construction (including initial equipment) shall exceed 80 per centum of the cost of the project. Not to exceed \$41,000,000 of the funds authorized in section 401 shall be available for construction grants under this section.

(c) Grants under this section for operation (including equipment other than initial equipment) of a project may be made up to 100 per centum of the costs thereof for the two-year period beginning on the first day such project is in operation as a health facility. For the next three years of operations such grants shall not exceed 50 per centum of such costs. No grants for operation of a project shall be made after five years following the commencement of such operations. Not to exceed \$28,000,000 of the funds authorized in section 401 of this Act shall be available for operating grants under this section.

Considerable concern was expressed by private physicians at the Callaway Gardens Conference over the question of bricks and mortar facilities. Explorations were made

there into the definition of the term Demonstration Health Facilities. At that time there was an ambiguity of definition. Such interpretations as "*concept* rather than a single type structure," "*a system* of providing comprehensive health care," "means of showing that you are doing something," "a program rather than a patient seine," were offered.

Resolution number 62 of the Health Advisory Committee, now included in the guidelines, also contained the following statement, opening section 1, Project Criteria:

Each demonstration health facility project should have as its objective the phased development, through clearly defined steps, of comprehensive health services for all segments of the population in a designated area.

In the preamble above the "Resolve," the following statement is made:

The development and operation of any community health service under section 202 shall preserve and encourage all existing programs and arrangements involving the relationship between the physician and the patient.

The Report of the Health Advisory Committee and the guidelines established include many laudable objectives. Certainly, one cannot dissent in the area of improving the quality of health care in any region where improvement is needed. One cannot but approve of programs directed toward increasing health manpower by direct educational programs. The reserve in this area is low, and with increasing demands of federal and other programs for manning, the small backlog has now fallen upon the hearth and is being rapidly consumed. One cannot question a *plan* for the delivery of proper health care to an area.

In Appalachia, a non-viable worm has long been a part of the necessary equipment for distillation. For a moment or two let us condense and reduce to essence some of the brew without the use of additives.

It would seem that a multicounty demonstration health center would propose to devel-

op and make provision for the delivery of *total* health care—diagnostic, therapeutic, preventive, and educational for *all* the citizens of the designated area. Section 202 provides the wherewithal for construction and for initial equipment up to 80% of the bricks mortar, ceramics, and metal. Then for two years it will pay up to 100% of the costs of operation, and for the next three years 50%.

Could the Appalachian Health Care Program be an evolving mechanism or pattern? Does it include those areas that so many people were concerned about in P. L. 89-239, the Heart, Stroke, Cancer and Related Disease legislation? The physical structures in P. L. 89-239 were eliminated prior to its final enactment by the Congress. The preamble to Resolution 62 speaks of the preservation of existing programs, arrangements, and relationships between the physician and the patient—note that it does not say "personal physician." Does an ambivalence become apparent when this is compared with the remainder of the document?

So far, with the exception of the last two paragraphs, this has been a briefing of available data and is presented for educational purposes only. The concluding paragraph is a recommendation, however.

The Doctor of Medicine in private practice presently is, and should remain, the essential person in the delivery of quality health care. It then behooves him to become informed about the health care aspects of Public Law 89-4, the Appalachian Act. He must become directly and actively involved as an individual in the planning and projection of the concepts involved. To support individual involvement and for correlation and communication, the Medical Society of the State of North Carolina has established a new committee, the Committee on Appalachia.

FRANK W. JONES, M.D.

*Westlake Hills
Newton, N. C. 28658*

Committees & Organizations

VENEREAL DISEASE CONTROL SECTION DIVISION OF EPIDEMIOLOGY

NORTH CAROLINA STATE BOARD OF HEALTH THE SYPHILIS CONTROL PROGRAM IN NORTH CAROLINA

The ultimate goal of the Venereal Disease Control Section of the North Carolina State Board of Health is the practical eradication of syphilis. To realize this formidable undertaking, four principal functions are employed which experience has demonstrated are essential to the control, and hopefully to the practical elimination, of syphilis. They are reflected as follows: (1) the epidemiology of infectious and early latent syphilis; (2) the elicitation of practicing physician participation in the eradication effort; (3) the reporting of all syphilis serologic reactors by private, hospital, and public laboratories; and (4) the development of a dynamic and comprehensive education program. It seems clear epidemiology must be the focal point of all activity in the eradication effort, and other priority areas serve as sources for epidemiology.

Observing each priority area individually, epidemiology is comprised of four main phases: (1) the effective interviewing and reinterviewing of every known case of primary, secondary, and early latent syphilis for sex contacts; (2) the productive interviewing for other persons who are possibly involved sexually in an infectious chain; (3) the rapid and thorough execution of field investigation to bring source and spread contacts to treatment within a minimal period of time; and to bring other high risks persons to examination within a reasonable period of time; and (4) earnest consideration for administration of prophylactic treatment to all clinically and serologically negative contacts falling within a three-month period subsequent to exposure. It is significant that from the 965 civilian cases of primary and secondary syphilis reported in fiscal year 1966, 47% (457 cases) were brought to treatment through contact tracing (shoe-leather epidemiology).

Too much can never be said of the importance of the cooperation of practicing physicians in the fight against syphilis. A joint survey recently conducted by the American Medical Association and the American Social Health Association revealed that private doctors treat over three-fourths of all venereal disease in the United States. It is our aim to elicit the practicing physician's cooperation in reporting to the appropriate county health department every case of venereal disease diagnosed in the course of practice, and in extending permission for the application of the epidemiologic process where indicated.

It is also our objective to augment the Health Department's capability of providing services to the practicing physician. Upon request, we will make available medical consultation in problem diagnoses, laboratory diagnostic services, and the delivery of current literature on venereal diseases. Physicians are urged to take advantage of our dark-field services by contacting local health departments. During the past fiscal year, private doctors reported 332 cases of infectious syphilis to the Venereal Disease Control Section. This figure represents 34% of the reported infectious syphilis morbidity.

The Laboratory Reactor Program serves as an excellent case-finding and surveillance tool. Institutions processing specimens for syphilis serology report all reactors to local health departments where each positive report is checked against morbidity files to rule out previous adequate treatment. After this procedure, follow-up is initiated. When a positive test specimen comes from a private source, a visit is made to the attending physician to learn what diagnosis the doctor has made, and to request permission to interview the case if the application of epidemiology is indicated. *Under no circumstances is a private patient ever approached without first consulting the attending physician. It should also be stated here that a reactive serologic test for syphilis of itself is not always considered as a final diagnosis of the disease, but as an obvious indication for further follow-up.*

In the calendar year 1965, the 229 labora-

tories in North Carolina performed 1,285,351 serologic tests for syphilis, of which 30,057 were positive, reflecting a reactor rate of 2.3%. There was a yield of 293 cases of infectious syphilis from the follow-up of positive specimens.

Educational case-finding and case-prevention is of prime importance in the pursuit of syphilis control. We are contributing to the development of a statewide public awareness campaign designed to expose the mass of the population to VD education. It is our aim to have the man on the street and the child at school sufficiently educated to respect the venereal diseases and to consciously avoid them; but if not this, to be aware of the possibility of infection, in the presence or absence of symptoms, and to be motivated to seek medical attention without delay. To approach this goal, we are working closely with school officials to introduce VD education into the public schools. Already 130,000 students are receiving VD education in grades 8 through 12. The general public is presently being reached through mass media which will be maintained on a continuing basis. Community awareness campaigns are being established throughout the state, which will be managed by the people themselves once they have been properly instructed in the essentials of VD education.

In summary, we realize that a successful eradication program must be supported by a partnership of practicing physicians and public health workers, with the practicing physician furnishing the diagnostic skills and the public health worker supplying the epidemiologic staff. There must be effective contact interviewing and rapid and thorough field investigation. High-risk persons other than direct sexual contacts must be selectively obtained through the interview process and brought to examination. Preventive therapy must be provided for contacts recently exposed to early infectious syphilis who are negative serologically and clinically on initial examination. And we realize that the general public, especially the teenager and young adult, must be supplied with the facts about syphilis and other venereal diseases, not only from the stand-

point of prevention, but to motivate people to voluntarily seek medical aid if there are clinical indications or a history of exposure. These are the tools of syphilis eradication.

Bulletin Board

COMING MEETINGS

Heart Association of Charlotte and Mecklenburg County, Postgraduate Film Seminar on Vascular Disease—Charlotte Memorial Hospital, February 15.

North Carolina Mental Health Association, Annual Meeting—Sir Walter Hotel, Raleigh, March 9-10.

National Conference on Rural-Urban Health—Queen Charlotte Hotel, Charlotte, March 10-11.

Duke Pediatric Seminar—Duke University Medical Center, Durham, March 14-16.

North Carolina Health Fair—National Guard Armory—Goldsboro, March 16-18.

Greensboro Academy of Medicine, 20th Annual Symposium—Greensboro, March 30.

Wilson Memorial Hospital Symposium on "Applied Endocrinology for the Practicing Physician"—Wilson, April 18.

Medical Society of the State of North Carolina, 113th Annual Session, Pinehurst, May 20-24th.

NEWS NOTES FROM THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE

The University of North Carolina School of Medicine, in connection with its present review and revision of the curriculum, is sponsoring a series of lectures on medical education by experts in the field from throughout the country. The lectures, which began January 7 and will conclude March 4, are given every Saturday morning at 11 o'clock in the Clinic Auditorium of the Medical School.

Speakers for the first three lectures were Lester J. Evans, M.D., visiting professor in medicine, Michigan State University; Betty Hosmer Mawardi, Ph.D., Western Reserve University; and Thomas Hale Ham, M.D., Western Reserve University.

Topics and speakers for the remainder of the series are as follows:

Jan. 28—"The Program in Medical Science at Brown University"—Mac V. Edds, Jr., Ph.D., Director of Medicine, Division of Biological and Medical Sciences, Brown University

Feb. 4—"Problems for the Medical Student of the Future"—Hans Popper, M.D., Professor and Chairman of the Department of Pathology and Dean for Academic Affairs, Mount Sinai School of Medicine.

Feb. 11—"The New Duke Medical Curriculum"—Eugene A. Stead, Jr., M.D., Professor and Chairman of the Department of Medicine, Duke University School of Medicine.

Feb. 18—"The Audio-Tutorial System—A Method for Independent Study"—Samuel N. Postlethwait, Ph.D., Professor of Botany, Purdue University

Feb. 25—"Initial Observations on the Use of a Multi-purpose Teaching Laboratory"—DeWitt Stetten, Jr., M.D., Ph.D., Dean, Rutgers Medical School

March 4—"Teaching, Learning, and Curriculum"—George E. Miller, M.D., Director, Office of Research in Medical Education, University of Illinois College of Medicine.

For further information write or call Dr. David R. Hawkins, Chairman, Curriculum Review and Revision, Department of Psychiatry, The University of North Carolina School of Medicine, Chapel Hill. Telephone 966-8595.

* * *

The wisdom of offering certain common nasal decongestants to the public on a non-prescription basis has been questioned by two psychiatrists at the University of North Carolina, School of Medicine.

Dr. Francis J. Kane, Jr., and Dr. Bruce Q. Green have published three case histories in which they suggest that using certain decongestants over a period of time may lead to acute psychotic episodes.

Their attention has been focused on combination preparations containing sympathomimetic amines. Such preparations are used as nasal decongestants for colds, hay-fever and sinusitis. Some are available without prescriptions.

* * *

Mrs. Ethel M. Nash, a family life specialist with the Bowman Gray School of Medicine in Winston-Salem for the last 10 years, has become a clinical associate professor of obstetrics and gynecology at the School of Medicine.

In addition to her part-time faculty duties, she will conduct a private practice with Psychiatric Associates of Chapel Hill.

Mrs. Nash completed her term as president of the American Association of Marriage Counselors at the annual meeting in Los Angeles, California in late November.

She went to Asia immediately after the meeting as consultant at the first Asian International Conference on the Family. En route, she visited medical schools in Bangkok, Cairo and Alexandria.

* * *

Dr. Robert D. Langdell, pathologist at the U.N.C. School of Medicine, was appointed a director of the American Association of Blood Banks during the annual convention in Los Angeles, California.

* * *

The School of Medicine devoted its 10th annual symposium in November to the early signs of cancer and how these telltale signs may be detected by biologic behavior.

The visiting speakers included Dr. Martin Lipkin of New York City, research collaborator at the Brookhaven National Laboratory and director of the Gastrointestinal Research Unit at Cornell University's Medical Division at Bellevue Hospital; Dr. Henry S. Kaplan of

Palo Alto, California, executive head of the Department of Radiology at Stanford University School of Medicine and former director of the Biophysics Laboratory there; and Dr. Ralph M. Richart of New York City, director of pathology and cytology at Sloane Hospital and pathologist at the Columbia University College of Physicians and Surgeons.

Faculty members from U.N.C. and Duke University participated in panel discussions and informal group discussions.

* * *

The National Institute of Dental Research awarded \$19,384 to a U.N.C. dentist-physician team to continue studies of the frequent ear, nose and throat infections associated with hearing losses among children with cleft palates.

This is the first known study aimed at finding out the role that bacteria in the mouth play in middle ear and upper chest infections.

Dr. James J. Crawford of the Oral Microbiology Laboratory at the U.N.C. School of Dentistry is the principal investigator. The co-investigators are Dr. Donald W. Warren, also of the dental school, and Dr. Newton D. Fischer and Dr. Erle Peacock, Jr., of the School of Medicine.

* * *

A search for clues to explain the chemistry of heredity will be continued for another three years at the U.N.C. School of Medicine under a federal grant totaling almost \$180,000.

The grant to Dr. Edward Glassman of the Department of Biochemistry is for basic research on the genetic control of an enzyme, xanthine dehydrogenase.

The research will seek to explain how different genes are turned on and off at different times to produce different, specialized types of cells—liver cells, muscle cells, nerve cells.

* * *

Dr. H. Fleming Fuller of Kinston was named vice president and president-elect of the Robert A. Ross Obstetrical and Gynecological Society at the second annual meeting in Chapel Hill.

Dr. Robert G. Brame of the U.N.C. School of Medicine was elevated to the presidency, succeeding Dr. Arthur R. Summerlin, Jr., of Raleigh.

Dr. William E. Easterling, Jr., of the U.N.C. School of Medicine was re-elected secretary-treasurer.

The society is named in honor of Dr. Robert A. Ross, founder and former chairman of the U.N.C. Department of Obstetrics and Gynecology and now professor of obstetrics and gynecology.

* * *

Construction is expected to start late next summer on a new building for the U.N.C. School of Nursing here in Chapel Hill.

A U. S. Public Health Service grant of \$1.1 million will be matched by \$805,000 appropriated by the 1965 General Assembly to construct a six-floor building adjacent to the medical sciences wing of the U.N.C. School of Medicine.

The building, to be named in honor of Mrs. Elizabeth

Scott Carrington of Burlington, is scheduled for occupancy in 1969.

* * *

Lipreading and listening skills will be taught to adults with hearing problems under a program developed by hearing and speech specialists at the U.N.C. School of Medicine.

Sessions have been scheduled on Tuesday and Thursday afternoons for five weeks beginning January 10, 1967.

Other sessions will be scheduled as needed after February 9.

Classes will be limited to eight patients who are 18 years of age or older. The cost of the 10 lessons will be \$25.

* * *

A building to cost about \$210,000 will be erected in the Research Triangle as the temporary headquarters for U.N.C.'s multi-million Center for Research in Pharmacology and Toxicology.

The 10,000 square foot building is scheduled for completion in February.

It is being constructed by the Research Triangle Institute under a three-year lease agreement. The building is a part of RTI's long-range building program and is being erected ahead of schedule to help solve a space problem for the Pharmacology-Toxicology Center.

RTI plans to use the space for its contract work after it is vacated by the U.N.C. facility.

* * *

Dr. Carl S. Blyth, U.N.C. professor of physical education and director of the applied physiology laboratory, has been appointed to a national Physical Fitness Research Task Force.

* * *

A national Bronfman Prize for creative public health achievement has been awarded to Dr. Bernard G. Greenberg, chairman of the Department of Biostatistics at the U.N.C. School of Public Health, by the American Association of Public Health. A \$5,000 cash award and a solid glass cube trophy were presented to Dr. Greenberg for "a keen mind, critical acumen and research talents which have raised the scientific level of public health."

* * *

Both the general public and the professionals have developed a blind spot to the widespread problem of word-blindness, according to a U.N.C. psychiatrist.

Word-blindness—known variously as specific reading disability, strephosymbolia and developmental or innate dyslexia—is more common than poor eyesight, epilepsy, mental retardation, or hearing and speech disorders.

In his new book, "Reading Disability: Developmental Dyslexia," Dr. Lloyd J. Thompson, clinical professor emeritus of psychiatry, estimates that one child out of 10 with the intelligence to read does not have the ability to read at a level proportionate to his intelligence.

He debunks the common belief that everyone who has attended school can read.

"The truth," he writes, "is that about 11 per cent of the adult population of this country has not learned to read up to the fourth-grade level."

Dr. Thompson admits that one of the main purposes of his book is to call attention to the often-overlooked or denied existence of reading problems due to "innate or constitutional factors."

His argument is that word-blindness is an inborn characteristic similar to color-blindness, tone deafness, or even to the "gift" of music.

NEWS NOTES FROM THE BOWMAN GRAY SCHOOL OF MEDICINE OF WAKE FOREST COLLEGE

Dr. William H. Boyce, professor of urology at the Bowman Gray School of Medicine, was Visiting Professor of Urology at Mayo Clinic Oct. 30-Nov. 4. He presented lectures on "Renal Calculi in Review;" "Anatomy, Neurology and Physiology of the Human Urinary Bladder;" and "Exstrophy of the Bladder."

* * *

Dr. Howard H. Bradshaw, professor and chairman of the Department of Surgery, spoke Nov. 20-21, at ceremonies for the dedication of a new wing at Nazareth Hospital, Philadelphia. He spoke on "Surgery of the Parathyroid."

* * *

Dr. William M. McKinney, assistant professor of neurology, has been elected secretary of the American Institute of Ultrasonics in Medicine. He was also named to the board of directors of the organization which promotes communications and understanding among researchers and clinicians on the use of ultrasonic energy in medical diagnosis and treatment.

* * *

Dr. Richard C. Proctor, professor and chairman of the Department of Psychiatry, was recently appointed to the Medical Advisory Board on Educational Film Production. The organization, with headquarters in Riverside, Calif., is planning the production of a series of 90 programmed instructional films for medical and nursing students on the subject of psychiatry.

* * *

A scientific exhibit, prepared at the Bowman Gray School of Medicine, was presented at the American Medical Association's Clinical Convention Nov. 27-30 in Las Vegas, Nev. The exhibit, "Pyelonephritis: A Current Clinical Reappraisal," was prepared by Dr. Clair E. Cox II, assistant professor of urology, and Dr. William G. Montgomery, instructor in urology.

* * *

Dr. A. Robert Cordell, associate professor of surgery, presented a paper on "Pericardiectomy for Constrictive Pericarditis—A Follow-up Study" at a recent meeting of the Southern Thoracic Surgical Association in Asheville.

Four members of the Bowman Gray faculty participated on the program of the 60th annual meeting of the Southern Medical Association Nov. 14-17 in Washington, D. C.

Dr. Richard C. Proctor, professor and chairman of the Department of Psychiatry, spoke on "The Emerging Picture of Occupational Psychiatry in the South" at a joint meeting of the Sections on Neurology and Psychiatry, Industrial Medicine and Surgery, and Physical Medicine and Rehabilitation.

* * *

Dr. John W. C. Fox, assistant professor of anesthesiology, presented a paper on "Neuroleptanalgesia: Technique of Choice for Cardiac Surgery." Dr. A. Robert Cordell, associate professor of surgery, was discussant for the paper.

Dr. Frank C. Greiss, Jr., assistant professor of obstetrics and gynecology, discussed a paper on "Invasive Carcinoma of the Cervix in Pregnancy."

* * *

Dr. Carolyn C. Huntley, professor of pediatrics, spoke on "Rheumatoid Arthritis with IgA Deficiency" at a meeting of the Southern Society for Pediatric Research held Nov. 10-11 in Oklahoma City, Okla.

* * *

Dr. David L. Kelly, assistant professor of neurosurgery, presented a paper on "Arteriovenous Malformations of the Brain" at a recent meeting of the American Academy of Neurological Surgery in San Francisco, Calif.

Dr. J. Stanton King, Jr., research associate professor of urology, spoke at the VII National Congress of Surgeons held Nov. 13-18 in Mexico City, Mexico. His topic was "Factors Involved in the Development of Calcigerous Urolithiasis."

* * *

Dr. I. Meschan, professor and chairman of the Department of Radiology, presented a paper on "Differential Renal ¹³¹I Renografin Clearance in Various Clinical Conditions" at the annual meeting of the Radiological Society of North America held Nov. 27-Dec. 2 in Chicago, Ill. An exhibit on "The Quantitation of Differential Renal Clearance without Ureteral Catheterization" also was presented. The exhibit was prepared by Dr. Meschan, Dr. C. Douglas Maynard and F. C. Watts.

* * *

Dr. Frederick L. Thurstone, associate professor and director of the Department of Biomedical Engineering, presented a paper on "Ultrasound Holograms for the Visualization of Sonic Fields" at the 19th annual Conference on Engineering in Medicine and Biology in San Francisco, Calif. He also chaired a session on "Ultrasonics and Acoustics."

* * *

Dr. Clark E. Vincent, professor of sociology and director of the Behavioral Sciences Center, spoke at the National Canadian Invitational Conference on Public Family Planning Clinics Nov. 17 in Toronto, Canada. His topic was "The Poverty Level Client in Family Planning Clinics."

Dr. Vincent also delivered two lectures at a conference of the Oklahoma Health and Welfare Association in Tulsa, Okla. He spoke on "Health Personnel and Preventive Marriage Counseling" and "Social Sources of Marital Stress."

NEWS NOTES FROM THE

DUKE UNIVERSITY MEDICAL CENTER

A new medical society has been established at Duke University Medical Center as a tribute to the late Dr. Frank L. Engel, a professor of medicine and associate professor of physiology who died in 1963.

The organization is the Engel Society. Its format will be a social one, contrived to promote the exchange of ideas and experiences between student and faculty.

The society has two groups consisting of 12 students—six senior and six junior—and 12 faculty members elected from the various sub-disciplines of clinical and preclinical medical sciences.

Dr. Engel was "interested in all aspects of medicine in its broadest sense and encouraged his students to be catholic in their interests," a spokesman for the society said.

The society will have six meetings each academic year, with a dinner followed by a talk on some subject of mutual interest by either a faculty member or student. Occasionally there will be an invited speaker.

Compliments of

Wachtel's, Inc.

★

Surgical Supplies

★

15 Victoria Road

P. O. Box 1716 Telephone AL 3-7616

ASHEVILLE, North Carolina

The Duke University Medical Center has received a \$175,000 grant from the W. K. Kellogg Foundation for expansion of its Graduate Program in Hospital Administration, according to an announcement by Ray E. Brown, director of the program.

Brown said the grant would allow for expansion of the program's functions in the following areas:

—An increase from 14 to 16 in the number of students admitted each year.

—Provision of two \$4,000 fellowships a year for students who wish to study for doctoral degrees in one of the sciences that underlie hospital administration.

—Expansion of the research potential of the program in such problems as hospital utilization, planning and design through the hiring of one full-time faculty member to function primarily as a researcher.

Brown, who also is president of the Association of University Programs in Hospital Administration, noted that government participation in medical care likely will increase. This is expected to lead to new patterns of hospitalization and medical care and new relationships between government and health agencies.

As these new patterns emerge, well-documented research into the administrative problems involved will be vital, he said.

He also pointed out that the Duke program now receives applications from five qualified students for every one who is accepted into the program.

* * *

If medical knowledge continues to expand at its present rate, a new doctor may be out of date five years after graduating from medical school, Dr. E. Harvey Estes, Jr., a professor of medicine at Duke Medical Center, maintains.

As chairman of the new established department of community health sciences, Dr. Estes' primary goal is to help produce a physician who will be able to stay on top of new developments in his field.

"The usual assumption is that community health needs can be met by new training programs in which the physician becomes familiar with community needs and better trained to handle them," Dr. Estes says.

But this is no simple matter. A critical shortage of physician manpower already exists which, he believes, is "only the uneven beginning of a more general shortage which will reach its acme in about 10 years."

Recruitment of family physicians is a growing problem. The tremendous personal responsibility, long hours, disrupted family relationships, and frustrations of family practice generally tend to sway new doctors into other fields, such as administrative, governmental, or academic medicine.

Dr. Estes believes this shying away from private practice is not a "retreat from hard work." It often is based on the individual's inability to remain current with the whole of medicine and the large volume of new information and at the same time fulfill the traditional obligation of the physician to those who need medical help, he says.

The only answer, he believes, is in increasing the efficiency of the individual physician by helping him

organize his efforts so he will have time to seek more post-graduate education.

The new department of community health sciences at Duke is attacking this problem by experimenting with new techniques for increasing the doctor's efficiency. One of these techniques involves the use of a computer complex, now in the process of being set up.

Another is an experiment in screening methods to perform routine tests in x-ray, electrocardiograms, and blood sampling to precede the more conventional medical examination. Such tests would employ highly-skilled technicians or physicians' assistants trained in special areas of medicine.

* * *

One of the capacities of a malignant cell is its ability to invade other cells adjacent to it. But what happens once normal cells and tumor cells have come together?

This is what a research team, headed by Dr. George D. Wilbanks is trying to find out at Duke University Medical Center.

With the aid of a \$14,500 grant from Damon Runyon Memorial Fund for Cancer Research, Inc., Dr. Wilbanks is looking for an answer by studying the cells in tissue culture. Using special microscopes and movie cameras, the living cells are photographed every few seconds during the meeting of the malignant and normal cells.

At the same time, the researchers are attempting to change the normal cells from the uterine cervix into malignant cells by using certain chemical carcinogens or cancer-causing elements. This study will enable them to follow closely the very earliest changes as a cell becomes cancerous.

The research, which started a year ago with a \$22,500 grant from Damon Runyon fund has resulted in the conclusion that the skin of the uterine cervix tends to be resistant to invasion by tumor cells, said Dr. Wilbanks, an assistant professor in obstetrics and gynecology. But connective tissue cells, he added, appear not to be as resistant.

"From this we assume the malignant cells do not devour or kill adjacent normal cells as was once thought, but simply work their way between the normal cells when the opportunity arises," Dr. Wilbanks explained.

EDUCATIONAL COUNCIL FOR FOREIGN MEDICAL GRADUATES

Dr. Combs Elected President

Joseph J. Combs, M.D., of Raleigh, secretary of the North Carolina State Board of Medical Examiners, has been elected president of the Educational Council for Foreign Medical Graduates, Inc., it was announced recently. His election came at a meeting of the Board of Trustees of the ECFMG held in Philadelphia.

Dr. Combs has been secretary of the N. C. State Board of Medical Examiners since 1950.

The Educational Council for Foreign Medical Graduates was formed in 1957 under the sponsorship of the

American Medical Association, American Hospital Association, Association of American Medical Colleges, and the Federation of State Medical Boards of the United States.

Dr. Combs was appointed in 1961 for a four-year term on the board of trustees to represent the Federation of State Medical Boards of the United States. He was re-appointed in June 1965 to serve another four-year term on the board.

Dr. Combs has practiced medicine in Raleigh since 1929 and has been Director of Student Health at N. C. State University in Raleigh since 1947. He had his pre-medical education at the University of North Carolina in Chapel Hill and at Columbia College in New York, receiving his medical degree from Columbia College of Physicians and Surgeons.

North Carolina and many other states require the certification of the ECFMG as a prerequisite for licensure of foreign graduates.

NORTH CAROLINA HEALTH COUNCIL

New trends in planning for comprehensive health services were explored by several experts in the field at the 17th annual meeting of the North Carolina Health Council held in Durham.

E. M. Herndon, of Durham, president of Hospital Care Association and president of the Health Council, presided at the meeting. Dr. Martin P. Hines, director of the Division of Epidemiology, State Board of Health, introduced the program.

The North Carolina Health Council is a planning, study, and coordinating agency for voluntary and governmental health programs in the state.

Officers, in addition to Herndon, are Dr. Jacob Koomen, of Raleigh, vice president; Dr. Frances S. McConnell of Chapel Hill, secretary; and Emory S. Hunt, Jr., of Chapel Hill, treasurer.

NORTH CAROLINA HEART ASSOCIATION

Edenton Tea Party Aids Heart Campaign

In support of the North Carolina Heart Association's public education campaign against heart disease, the Edenton Chapter of the Daughters of the American Revolution recently restaged the famed Edenton Tea

Party of 1774 at the home of Peneiope Barker, organizer of the original.

In a message to the women of Edenton, British Consul-General Thomas C. Sharman agreed to supply tea from England for the new Tea Party, which took place on Jan. 2, 1967. His message read, in part:

"I feel that, in the atmosphere of goodwill and friendship which surrounds Anglo-American relations today we should congratulate the ladies of Edenton on their intention to re-stage the famous Edenton Tea Party and on their support of a Declaration of Independence from Heart Disease.

"Old embargos dating from 1774 should no longer prevent the Edenton ladies from enjoying the exquisite qualities of a dish of tea from England, and I am therefore sending a package of this beneficent beverage post haste, and with the compliments of Her Majesty's Government.

"Now that there is no tax, either on tea or goodwill, I trust that the normal flow of commerce between Edenton and Great Britain will grow apace. I am delighted to have this opportunity of wishing the Tea Party every success in aiding the conquest of heart disease."

AMERICAN COLLEGE OF CARDIOLOGY

The American College of Cardiology will hold its 16th Annual Sessions Feb. 15-19 in Washington, D. C. The five days of scientific presentations on research and clinical advances will be held at the Washington Hilton Hotel.

Highlights of the session will include a panel discussion on "Controversies in Cardiology" and a symposium on space medicine. The controversies panel of national authorities will present opposing views on such topical subjects as revascularization of the heart, prophylactic digitalization, long-acting nitrites and polarizing solutions.

For further information, address: William D. Nelligan, Executive Director, American College of Cardiology, 9650 Rockville Pike, Washington, D. C. 20014.

AMERICAN MEDICAL WRITERS' ASSOCIATION

The American Medical Writers' Association announces the publication of a Directory of Free-Lance Writers, Editors and Researchers, prepared by the Special Committee on Free-Lance Work, under the chairmanship of Ed F. Lindner. It is the first directory to list specialists in the many areas of medical communication, who are available for free-lance work. The listings give name and address; type of service, whether writing, editing, researching; and field of specialization, like legal, dental, nutrition, pharmaceutical companies, advertising agencies.

The American Medical Writers' Association Directory should help users of free-lance medical writing talent choose a person interested in the project and qualified to do a professional job of high competence. Directory available on request from American Medical Writers' Association, 2000 P Street, N. W., Washington, D. C. 20036.

**AN
ETHICAL
AND
EFFECTIVE
COLLECTION
SERVICE**

SPECIFICALLY DEVELOPED
FOR THE
MEDICAL PROFESSION



**Professional
Service Co.**

93 MASSACHUSETTS AVENUE
BOSTON 15, MASSACHUSETTS

NATIONAL INSTITUTES OF HEALTH

The cooperation of physicians is requested in a study of lymphosarcoma and reticulum cell sarcoma in children and young adults being conducted by the Medicine Branch of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

All clinical stages of biopsy-proven disease are acceptable, and untreated patients are preferred. Slides of pathologic material must be submitted for review before patients can be accepted.

Of particular interest are those patients with clinical and histologic features similar to the malignant lymphoma of African children (Burkitt tumor). These patients generally present with jaw, ovarian, or abdominal masses.

Physicians who wish to have their patients considered for the study may write or telephone: John L. Ziegler, M.D., The Clinical Center, National Institutes of Health, Building 10—Room 12-N-226, Bethesda, Maryland 20014.

* * *

Investigation of possible causal relationship between DNA viruses and human cancer will be carried out under three Public Health Service contracts. These projects, totaling approximately \$357,000, are part of the National Cancer Institute's DNA Solid Tumor Virus Program.

A contract with the University of Texas M.D. Anderson Hospital and Tumor Institute, Houston, will collect blood serum from cancer patients which will be studied for the presence of antibodies to DNA (deoxyribonucleic acid) viruses. A contract with Lilly Research Laboratories, Indianapolis, Indiana will provide large quantities of radioactively labeled DNA viruses for use in studies of how the DNA or viruses affect the DNA in malignant human cells. A broad spectrum of studies to elucidate the role of viruses in human cancer will be extended by a contract with Merck Institute for Therapeutic Research, West Point, Pennsylvania.

NATIONAL MEDICAL LIBRARY

Cumulated Index Medicus, Volume 7, 1966, will be available early in February 1967, it has been announced by Dr. Joseph Leiter, associate director for Intramural Programs of the Public Health Service's National Library of Medicine. This volume will contain more than 164,000 citations of articles which were indexed in the 12 monthly issues of *Index Medicus* for 1966.

According to Dr. Leiter, "Improvements in the NLM computer-based Medical Literature Analysis and Retrieval System (MEDLARS) have made possible the publication of the 1966 cumulation several months earlier than ever before. This reflects a major step in the Library's efforts to accelerate the flow of increasing volumes of biomedical information to clinicians, scientists, and educators."

The Month in Washington

The National Institutes of Health is concentrating its efforts in the artificial heart field to support of programs for development of auxiliary heart-pumping devices instead of a completed artificial heart.

The auxiliary device approach includes the programs led by Dr. Michael E. DeBakey of the Baylor University College of Medicine in Houston and Dr. Adrian Kantrowitz, chief of surgical services at Brooklyn's Maimonides Hospital. Other teams working on developing complete artificial hearts will continue their research, but the government will not emphasize their approach.

The decision to forego for the present a major program to build a complete artificial heart was made by Dr. James A. Shannon, NIH director, after he determined that not enough fundamental information existed on just how the heart operates to make such a project feasible.

Dr. Kantrowitz described the problems involved in designing artificial heart devices in a speech at a meeting of the American Society of Mechanical Engineers in New York.

Dr. Kantrowitz praised the partnership between physicians and engineers necessary in the artificial heart field but he said efforts must be made to ensure that leadership in the research must remain with the medical profession and not be given to engineers who do not fully understand the medical problems involved.

* * *

Obesity has become a major health problem in the United States and a special health hazard for three obesity-prone groups, according to the Public Health Service.

Quoting a new PHS source book for health professionals, "Obesity and Health," the Service said that the prevalence of obesity in this country is a source of growing medical concern because "fat people are more likely to develop certain diseases and to die at an earlier age than people of normal weight."

Prime candidates for the development of obesity and its attendant association with certain serious disorders and possible early death, according to the PHS, are:

1. Children whose relatives are obese: In one study, 73% of 1,000 obese patients had at least one obese parent.
2. Heavily built persons who also have corpulent tendencies: Obese individuals usually have a heavier physique than their non-obese counterparts. Large-boned and thickly muscled persons, particularly adolescents, who fit this description should be watched closely.
3. Persons who are becoming less active, more sedentary: Food intake does not decrease proportionately with decrease in energy expenditure. As activity decreases, for whatever reason, the risk of developing obesity increases.

The Service said that while a substantial amount of obesity exists at every age in both sexes, obesity in children and adolescents is a particularly discouraging omen for the future.

"Obese children and adolescents are a major reservoir for obesity in adult life," the source book said.

No bottle of children's aspirin sold after July 1, 1967, will contain more than 36 tablets, in a joint government-industry effort to reduce accidental overdose.

This restriction was one of several steps announced jointly by the Food and Drug Administration and 32 drug firms after a conference aimed at curbing childhood deaths and illnesses.

Also by July 1, bottle of children's aspirin will contain this cautionary label:

Precaution: No cap is 100 per cent child-

proof. In case of accidental overdose, notify physician immediately."

Also agreed on was a limitation in the potency of children's aspirin. Some now range as high as 5 grains a tablet. The new limit will be 1 1/4 grains.

Classified Advertisements

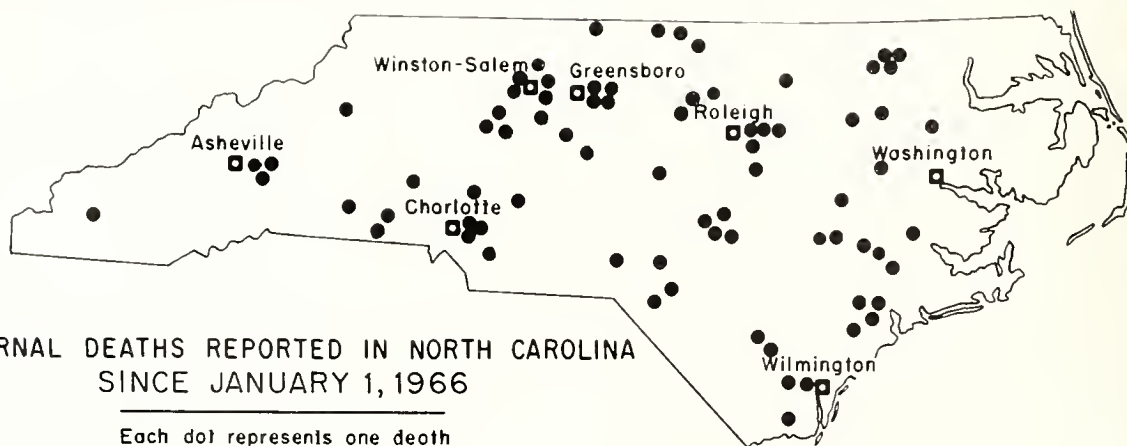
Pediatric practice available for follow up pediatrician mountain town-county fifty thousand population also drawing other areas. Three hospital town opening suitable two pediatricians with office available and take over arrangements. Marked urgency on this replacement. Write "Placement Service 14-25", P. O. Box 790, Raleigh, N. C. **TF**

WANTED: Full time industrial physicians for permanent employment in DuPont Company plants. Excellent opportunity. General practitioner preferred. Salary open. Immediate opening at May Plant in Camden, S. C. Please write to: G. W. Hammon, Personnel Section, E. I. DuPont de Nemours & Co., Inc., Drawer "A," an equal opportunity employer. **JF**

Associate Medical Director, Full-Time, Interested in Preventive Medicine for Large Corporation in Winston-Salem, North Carolina. Generalist, Internal Medicine or Occupational Health Background Preferred. Desirable Age 30 to 45. Salary, Commensurate with Experience. Reply to Box 790, Raleigh, N. C. 27602.

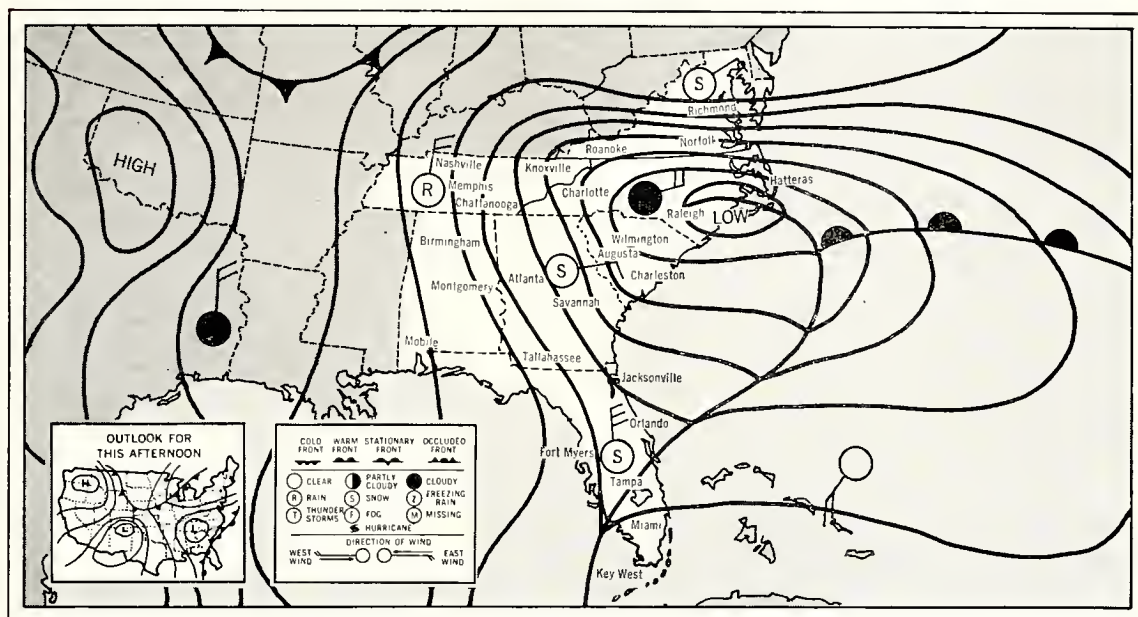
Wanted: Pediatrician for Burlington, N. C. Three other pediatricians will assist and provide coverage. This is an excellent opportunity in an ideal location. May write Dr. Paul F. Maness, 328 W. Davie St., Burlington, N. C., or call 228-8341. **J**

Wanted: Physician to Staff Reorganized Emergency Room on group practice set-up basis at Wilmington, North Carolina. For detail contact Donald B. Koonce, M.D., care Walker Memorial Hosp., Wilmington, N. C. **JFM**



REGIONAL WEATHER FORECAST

Record Low Temperatures and Heavy Rain Followed by Cough, Stuffed and Runny Noses and Aches and Pains.



Tussagesic breaks up coughs, quickly clears stuffed and runny noses and relieves aches and pains. Provide coverage of the tough cold for up to 24 hours with just a single timed-release tablet dosed morning, midafternoon and at bedtime.

each

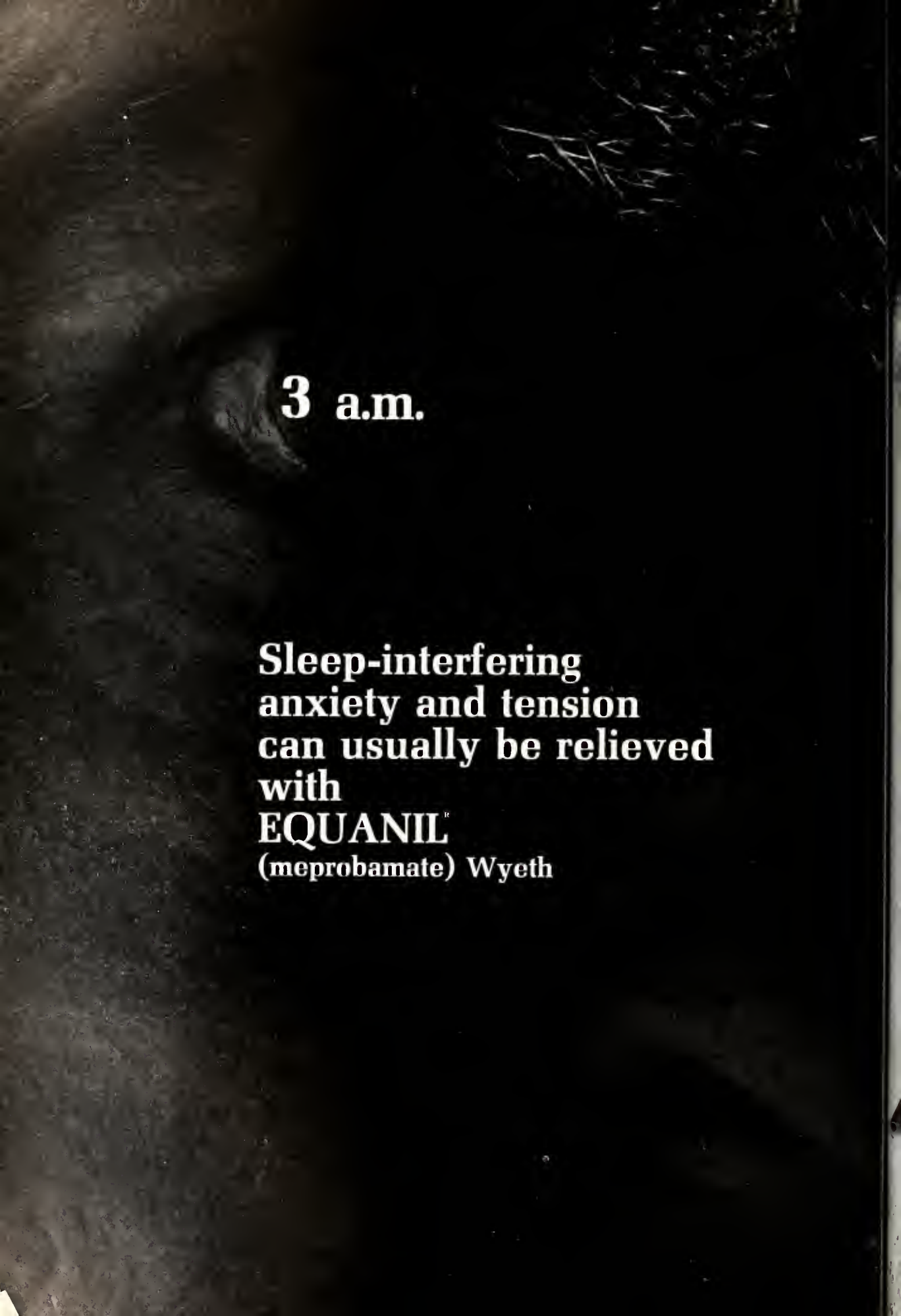
Tussagesic[®]

timed-release tablet contains:

Triaminic [®]	50 mg.
(phenylpropanolamine hydrochloride 25 mg., pheniramine maleate 12.5 mg., pyrilamine maleate 12.5 mg.)	
Dextromethorphan hydrobromide	30 mg.
Terpin hydrate	180 mg.
Acetaminophen	325 mg.

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. **Side effects:** Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. **Precautions:** The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

DORSEY LABORATORIES • a division of The Wander Company • LINCOLN, NEBRASKA



3 a.m.

**Sleep-interfering
anxiety and tension
can usually be relieved
with
EQUANIL[®]
(meprobamate) Wyeth**



Cautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. After prolonged high dosage, drug should be withdrawn gradually to avoid possibly severe withdrawal reactions including epileptiform seizures. Side effects include drowsiness and, rarely, allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute non-thrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Warn patients of possible reduced alcohol tolerance. Should drowsiness, ataxia, or visual disturbances occur, dose should be reduced. If symptoms persist, patients should not operate vehicles or dangerous machinery. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Other blood dyscrasias—aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia—have occurred rarely, almost always in the presence of known toxic agents. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. Prescribe very cautiously for patients with suicidal tendencies. Suicidal attempts should be treated with immediate gastric lavage and appropriate supportive therapy.

Contraindications: History of sensitivity to meprobamate.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

Wyeth Laboratories
Philadelphia, Pa.



When
thiazide
or
reserpine
alone
won't
keep

**BLOOD
PRESSURE
DOWN**

Establish and maintain early, more decisive control of blood pressure

DIUTENSEN-R[®]

Cryptenamine 1.0 mg.* Methyclothiazide 2.5 mg. Reserpine 0.1 mg.

When blood pressure won't stay down despite initial therapy — when complaints of headache, fatigue or dizziness are often voiced — it may be time for a change to DIUTENSEN-R.

DIUTENSEN-R is thiazide and reserpine *plus* cryptenamine — a rational, comprehensive therapy to help establish and maintain early, more decisive control of blood pressure.

The cryptenamine in DIUTENSEN-R helps improve normal vasodilating reflexes while the thiazide and reserpine components maintain vasorelaxant, sedative, and saluretic benefits. Cryptenamine lowers pressoreceptor reflex thresholds (which may be abnormally high in hypertension) — "resets" pressoreceptors to function at more nearly normotensive levels.

Early, more decisive control with DIUTENSEN-R helps secure continuing benefits — may reduce or even obviate the need for poorly tolerated drugs later in therapy.

"...quite apart from the problem of vascular damage, there arises a possibility of virtual 'cure' or remission of hypertension when treatment is early, i.e., before too many other secondary pressor systems have entered into the disequilibrium of pressor control, and when it is adequately suppressive."

Corcoran, A. C.: The choice of drugs in the treatment of hypertension. In: *Drugs of Choice* 1966-67, W. Modell, Ed., St. Louis, C. V. Mosby Company, 1966, p. 417.

Indications: DIUTENSEN-R may be employed in all grades of essential hypertension.

Dosages: Usual dose is 1 tablet twice daily, at morning and evening meals.

However, adjustment of dosage to suit individual circumstances may be required. Please refer to package insert for full particulars. **Side effects and precautions:** The side effects observed with patients on DIUTENSEN-R have been of a mild and nonlimiting nature. These include occasional urinary frequency, nocturia, nasal congestion, muscle cramps, skin rash, joint pains due to gout symptoms and nausea and dizziness which have been reported for the individual components. Most of these symptoms disappear while the drug is continued at the same or lower dosage level. The concomitant use of digitalis and DIUTENSEN-R may increase the possibility of digitalis-like intoxication. If there is evidence of myocardial irritability (extrasystoles, bigeminy or AV block), dosage of DIUTENSEN-R should be reduced or discontinued. Nocturia in patients with marginal cardiac status and salt and fluid retention can be effectively controlled by limiting the time of administration to early afternoon. DIUTENSEN-R should not be used in patients with a known intolerance to reserpine. Package inserts furnish a complete summary of recommended cautions related to each of the ingredients of DIUTENSEN-R.

*As tannate salts equivalent to 130 Carotid Sinus Reflex Units.

NEISLER

UNION
CARBIDE

NEISLER LABORATORIES, INC. • DECATUR, ILLINOIS
SUBSIDIARY OF UNION CARBIDE CORPORATION



Now, now, Mrs. Forsythe, we've never lost a cold patient yet.

When she's experiencing acute discomfort from cold symptoms, it's small wonder the patient becomes distressed about her condition.

She will breathe easier when you prescribe Novahistine LP.

Novahistine LP is a long-acting decongestant that helps restore normal mucus secretion and ciliary activity—physiologic mechanisms which prevent infection of the respiratory tract. A dose of two tablets taken in the morning and repeated in the evening will usually keep air passages clear for 24 hours.

Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention.

Caution patients who operate machinery or motor vehicles that drowsiness may result.

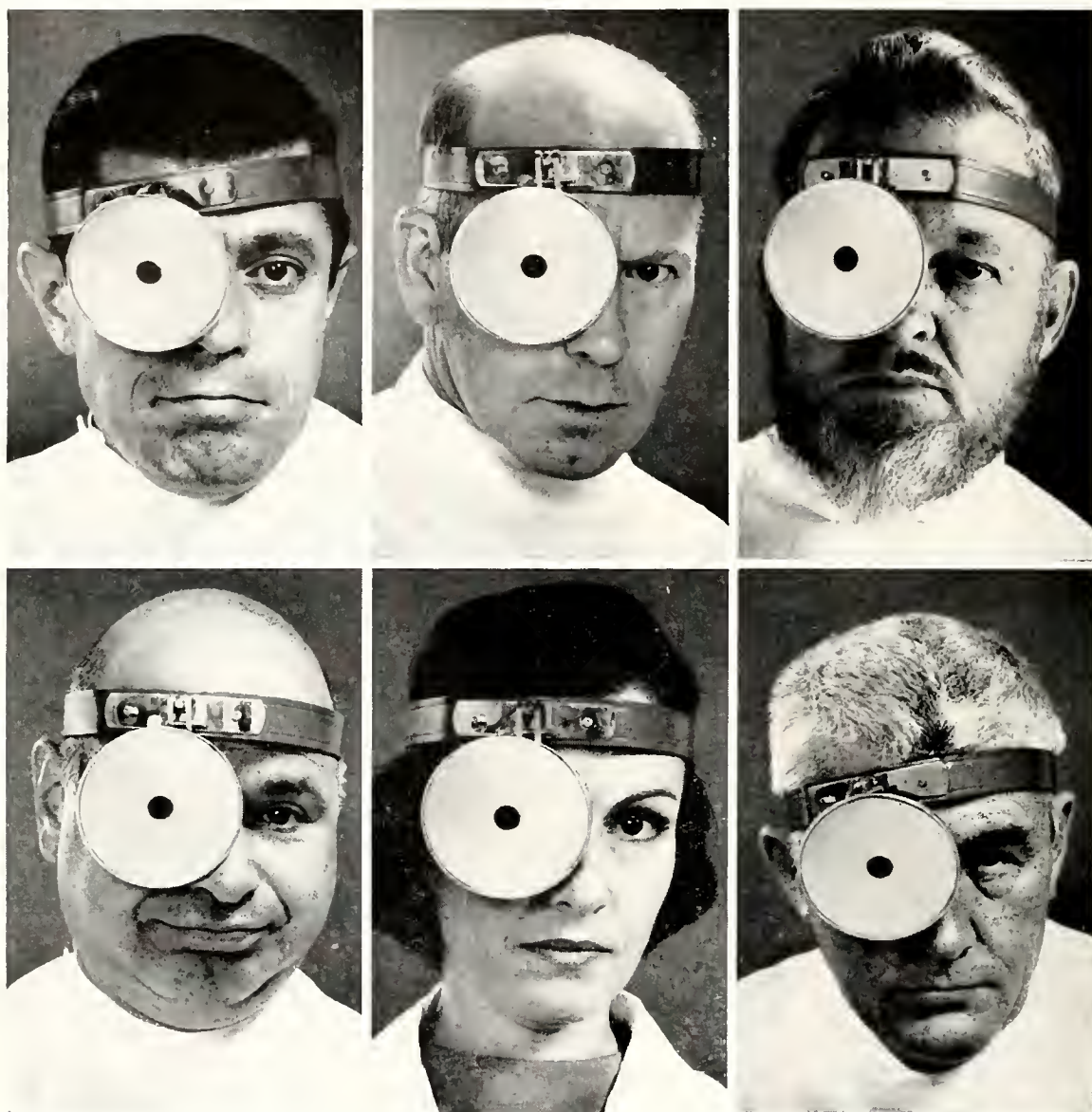
Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

 **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis

NOVAHISTINE[®] LP

For relief of nasal congestion.

Saxon



"All Otolaryngologists are Alike"

Just look at them and you can see how much they have in common. Besides, they all go through pretty much the same training, and pass the same kinds of tests, and measure up to the same sort of standards. Therefore, all otolaryngologists are alike. Right?

Wrong! But that's no more preposterous than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

Bayer's standards are far more exacting. In fact, there are at least nine *specific differences* involving moisture content, purity, potency and speed of tablet disintegration,

which make the manufacture of Bayer® Aspirin so different.

These Bayer standards result in significant product benefits, including gentleness to the stomach and product stability, that enable Bayer Aspirin tablets to *stay* strong and gentle until they are taken.

So next time you hear someone say that *all* aspirin tablets are alike, you can say, with confidence, that "it just isn't so."

You might also say that all otolaryngologists aren't alike, either.



JOIN PROJECT WEIGHT WATCH.

You won't get any buttons. Or badges. Or decorations.

But you will get the satisfaction of making a weighty problem smaller.

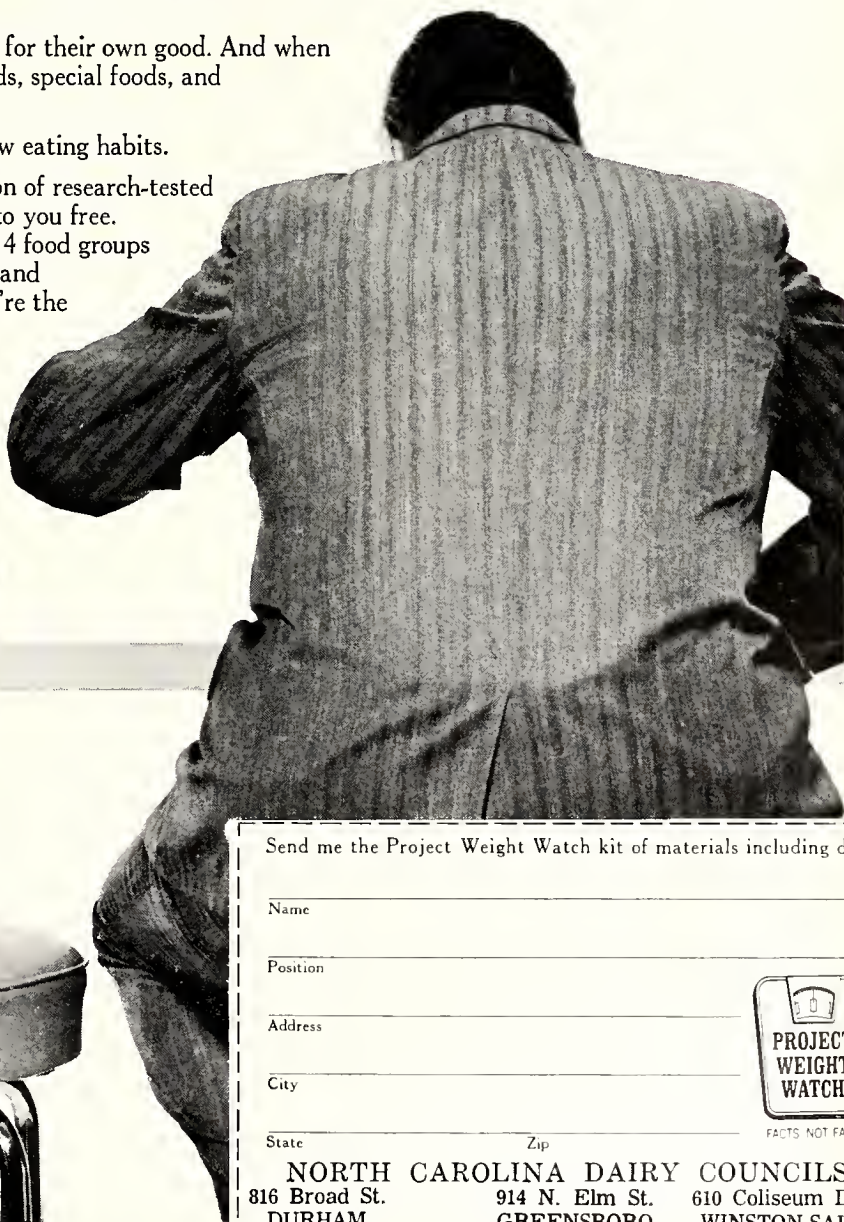
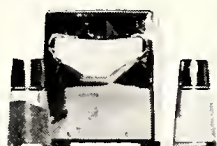
Most people are eating too much for their own good. And when they diet, they're confused by fads, special foods, and starvation plans.

Of course, what they need are new eating habits.

That's what prompted preparation of research-tested scientific diets which are offered to you free.

They're a realistic balance of the 4 food groups—meat, bread and cereals, fruits and vegetables and dairy foods. They're the kind of diets you'd write yourself, if you had the time.

Send for them. The shape of the nation is up to you.



Send me the Project Weight Watch kit of materials including diets.

Name _____

Position _____

Address _____

City _____

State _____

Zip _____



FACTS NOT FADS

NORTH CAROLINA DAIRY COUNCILS
 816 Broad St. 914 N. Elm St. 610 Coliseum Drive
 DURHAM GREENSBORO WINSTON-SALEM

**DIARRHEA
MUCOUS COLITIS
DIVERTICULITIS
SPASTIC URETERITIS
BLADDER SPASM**

are relieved with.....


Trocinat[®]
BRAND THIPHENAMIL HCl

Minimum dosage 400 mg., q. 4 h. until relief is constant, adjust maintenance dosage.

A therapeutic blood level cannot be obtained with small dosage. Trocinat is metabolized and eliminated in the urine as harmless degradation products—a safety factor. Sixteen years of clinical usage with the absence of untoward effects establishes the safety of Trocinat. The autonomic nervous system is not involved in its prompt action.

NOW AVAILABLE IN 2 STRENGTHS,
100 mg. and 400 mg.
PINK SUGAR-COATED TABLETS

Literature and samples available.

WM. P. POYTHRESS & CO., INC.
RICHMOND, VIRGINIA 23217

Manufacturers of ethical pharmaceuticals since 1856



FRED. BY SAUNDERS SCHULTZ

FREE YOUR PATIENTS from
✓ deficient neutralization
✓ poor taste
✓ burdensome cost
with DICARBOSIL[®] antacid

■ **effective neutralizing power**—Two tablets in vitro¹, provide nearly 2 hours' relief within effective pH range 3 to 5.5.

■ **pleasant taste**—A fresh mint flavor patients continue to enjoy. With Dicarbosil's unique* formulation, chalky after taste is no longer a problem.

■ **exceptional economy**—Due to its high neutralization capacity combined with low cost (about 1¢ or less per tablet), Dicarbosil is within the reach of all patients.

1. Schleif, R.H.: J.A.P.H.A., 46: 179, 1957 *U.S. Pat. No. 3,062,714

Active Ingredients: Calcium Carbonate Precipitated 0.489 Gm., Magnesium Carbonate 0.011 Gm., Magnesium Trisilicate 0.006 Gm.

Write for Professional Samples



ARCH LABORATORIES

A Division of Lewis-Howe Company

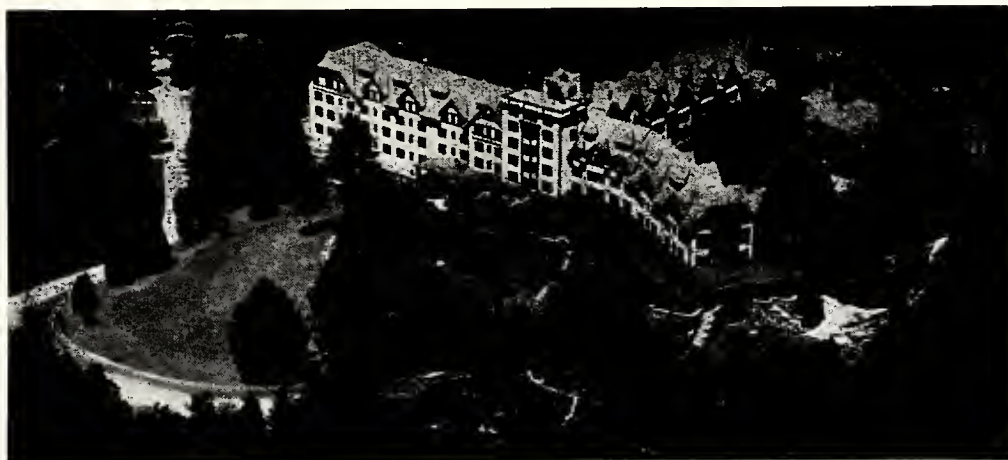
319 South 4th Street • St. Louis, Missouri 63102

APPALACHIAN HALL

ESTABLISHED — 1916

ASHEVILLE

NORTH CAROLINA



An Institution for the diagnosis and treatment of Psychiatric and Neurological illnesses, rest, convalescence, drug and alcohol habitation.

Insulin, Coma, Electroshock and Psychotherapy are employed. The Institution is equipped with complete laboratory facilities including electroencephalography and X-ray.

Appalachian Hall is located in Asheville, North Carolina, a resort town, which justly claims an all around climate for health and comfort. There are ample facilities for classification of patients, rooms single or en suite.

Wm. Ray Griffin, Jr., M.D.

Robert A. Griffin, M.D.

Mark A. Griffin, Sr., M.D.

Mark A. Griffin, Jr., M.D.

For rates and further information write

APPALACHIAN HALL, ASHEVILLE, N. C.



for psychiatric treatment

Peachtree Hospital, located in Atlanta, Georgia, is a complete psychiatric, alcoholic and drug addiction treatment facility accredited by the Joint Commission on Accreditation of Hospitals. The hospital has 65 beds, 47 of which are devoted to the care of psychiatric patients

and 18 of which, in a separate area, are for patients with acute cases of chronic alcoholism or drug addiction. Treatment procedures include psychotherapy, electroconvulsive shock therapy, subinsulin coma and chemotherapy. We will be pleased to provide further information upon request.

ACCREDITED BY THE JOINT COMMISSION ON ACCREDITATION OF HOSPITALS

peachtree hospital

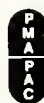
41 PEACHTREE PLACE, N. E. / TELEPHONE 873-5681 / ATLANTA 9, GEORGIA

New drugs take exams, too.

Today, virtually every medical school in the United States cooperates with pharmaceutical manufacturers in the clinical evaluation of new and promising drugs. Just as you might find it significantly more difficult to practice medicine without the useful new compounds made available through original pharmaceutical research in the past twenty years—prescription-drug manufacturers would find it equally difficult to obtain extensive, long-term, dependable evaluations of new therapeutic agents without the close cooperation of medical staffs and clinical

facilities of medical schools and teaching hospitals. Such cooperation leads toward more effective care of more patients—the common goal of medical and pharmaceutical research—toward reduction in the cost of disease, toward increase in useful longevity.

This message is brought to you as a courtesy of this publication on behalf of the producers of prescription drugs.



**Pharmaceutical
Manufacturers Association
Pharmaceutical
Advertising Council**

1155 Fifteenth St., N. W., Washington, D.C. 20005



"Take a laxative" is a harsh sentence

Although there are more than 60 ethical laxatives available for the constipated patient, many, unfortunately, do not really produce an effect much like a normal bowel movement. Instead they whip the bowel, torment it and leave it irritated, inflamed and exhausted.

On the other hand, Dulcolax

provides a nearly normal movement. Through its unique contact action, it induces the kind of natural contraction waves of the colon necessary for gentle, complete, comfortable bowel movements.

For your next constipated patient, try Dulcolax—the laxative with the gentle touch.

Dulcolax, brand of bisacodyl tablets (5 mg.)

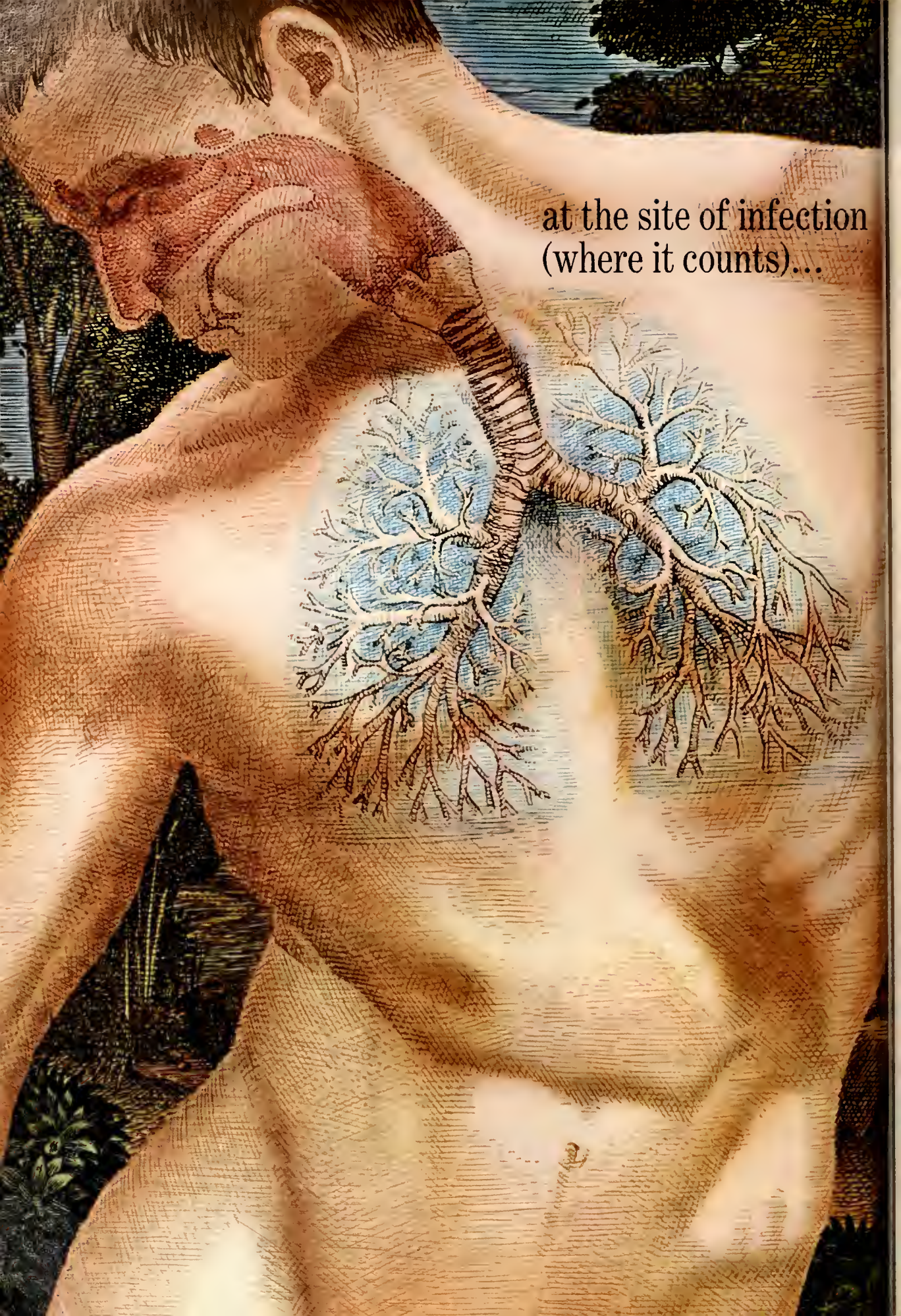
Under license from
Boehringer Ingelheim
G.m.b.H.

Geigy Pharmaceuticals
Division of
Geigy Chemical Corporation
Ardsley, New York

Dulcolax® a gentle persuasion

Geigy

at the site of infection
(where it counts)...



Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed ... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food^{1,3}

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.^{1,2} Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.^{1,3}

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of

staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Ilosone®
Erythromycin Estolate

700121



(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone. **Contraindications:** Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with pre-existing liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extra-hepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to

be definitely related to use of the drug, laboratory findings characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalofluorescent flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has been reported in other patients taking prolonged courses of medication. Patients with chronic infection have been given to 2 Gm. of the drug daily for periods of two to six months. Patients with rheumatic fever have taken prophylactic doses of 0.5 Gm. daily for two years without difficulty. In one group of 144 patients who received the drug daily for two years, no jaundice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episodes of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels determined in a group of fifty-four adults and children who received 250 mg. of Ilosone daily for an average of sixteen months for rheumatic fever prophylaxis. The results were compared with those of a similar group of forty-four patients who received penicillin. There were no cases of jaundice in either group. Elevations of SGPT and serum alkaline phosphatase levels during the course of treatment was observed in one patient treated with Ilosone and in two patients treated with penicillin. Seven other patients in the group receiving Ilosone and four others in the penicillin group showed elevations in one of the tests at some time during administration of the drugs.

Very satisfactory therapeutic results, without toxicity, reported in 102 pediatric patients who received short-term (one to ten day) courses of Ilosone in the treatment of streptococcal infections. Results of liver function tests in these patients were comparable to those in a similar control group who had received penicillin.

Gastro-intestinal disturbances not associated with hepatic effects are observed in a small proportion of individuals as a result of a local stimulating effect of the medication on the alimentary tract; however, the normal intestinal gram-negative bacterial flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the use of erythromycin, there have been occasional reports of urticaria, skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®

Ilosone Chewable Tablets

Ilosone Drops

Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of weight, the usual dosage is 5 mg. per pound every six hours. For children twenty-five to fifty pounds, 125 mg. every six hours. (Tablets Ilosone Chewable should be chewed or crushed and swallowed with water.)

For adults and for children over fifty pounds, the usual dosage of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromycin therapy should be considered.

In the treatment of syphilis, the recommended total dosage is 20 to 30 Gm. given in divided doses for a period of ten to fifteen days. Close follow-up of the patient is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examinations of spinal fluid are recommended as part of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days is recommended. In the treatment of gonorrhea, patients with suspected lesion of syphilis should have a dark-field examination before receiving antibiotics, and monthly serologic tests should be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 mg. (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base), in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 100 size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packages.

References: 1. Griffith, R. S., and Black, H. R.: *Am. J. M. Sc.*, 247:69, 1968. 2. Griffith, R. S., and Black, H. R.: *Antibiotics & Chemother.*, 12:398, 1968. 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: *Am. J. M. Sc.*, 239:198, 1965.

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

Li



after surgery

B and C vitamins are therapy: Therapeutic amounts of B and C in stress formula vitamins often are vital during periods of physiologic stress. STRESSCAPS capsules, designed to meet increased metabolic demands, aid in achieving a more comfortable convalescence, a more rapid recovery. After surgery, as in many stress conditions, STRESSCAPS vitamins are therapy.



Stresscaps[®]

Stress Formula Vitamins Lederle



Each capsule contains:

Vitamin B ₁ (Thiamine Mononitrate)	10 mg
Vitamin B ₂ (Riboflavin)	10 mg
Vitamin B ₆ (Pyridoxine HCl)	2 mg
Vitamin B ₁₂ Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York



627-6-3613



Let's get
down to earth
about
diuretics

With Hygroton, you'll discover that you can almost always use fewer tablets than is possible with other diuretics.

You may be told that a new short-acting diuretic was found more effective than Hygroton in congestive heart failure—but this was when twice the manufacturer's maximum recommended dose was given.* At the maximum recommended dose for both diuretics, two tablets of Hygroton were far and away more effective than five tablets of the other diuretic in producing natruresis and weight loss. And at these dosages, Hygroton costs only 1/3 as much as the other diuretic.

Since the discovery of chlorothiazide, the trend has been away from short-acting, multiple-dose, high-cost diuretics. With Hygroton you can usually do the job with just one tablet a day, or every other day.

More than any of the newer diuretics, Hygroton brings dosage and cost of medication down to earth.

*Brest, A. N., et al.: J. New Drugs 5:329, 1965.

Hygroton®
chlorthalidone

Indications: Hypertension and many types of edema involving retention of salt and water. **Contraindications:** Hypersensitivity and most cases of severe renal or hepatic disease. **Warning:** With administration of enteric-coated potassium supplements, the possibility of small bowel lesions should be kept in mind. **Precautions:** Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. **Side Effects:** Dizziness, weakness, nausea, vomiting, hyperglycemia, hyperuricemia, headache, muscle cramps, postural hypotension, constipation, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin reactions, including urticaria and purpura, epigastric pain, or G.I. symptoms after prolonged administration. **Average Dosage:** One tablet (100 mg.) with breakfast daily or every other day. **Availability:** Tablets of 100 mg. in bottles of 100 and 1000. For full details, see the complete prescribing information. 6524-V(B)

HY-4735

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation, Ardsley, New York

Geigy

Norinyl[®] tablets

(norethindrone 2 mg., mestranol 0.1 mg.)

for multiple contraceptive action that has produced a record of unexcelled effectiveness

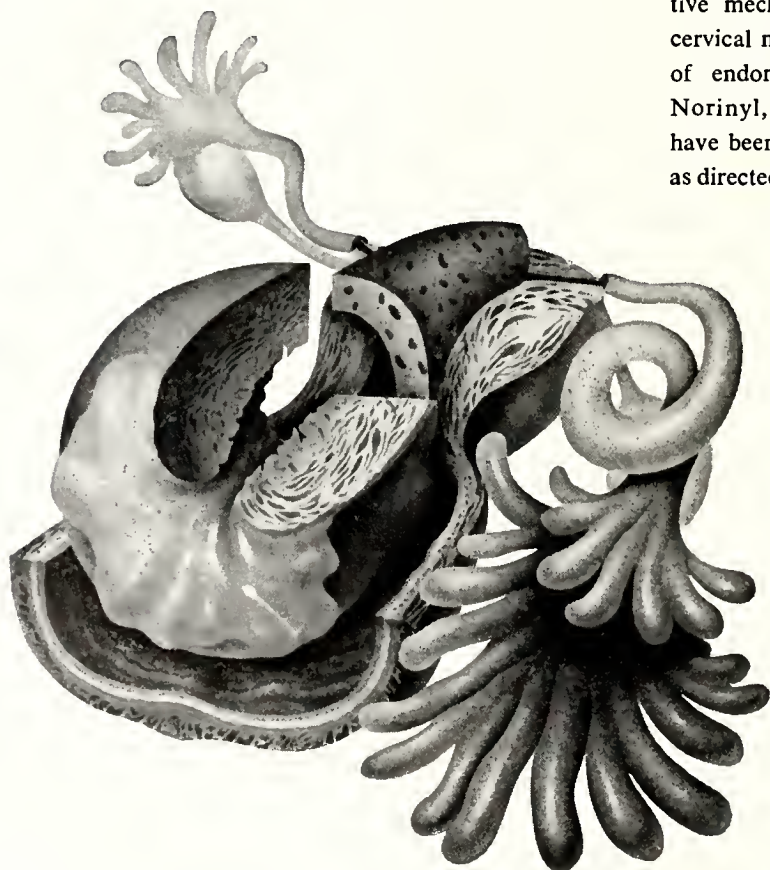
**inhibition of ovulation by means of
2 time-proved hormonal agents**

**production of a cervical mucus hostile to
sperm motility and vitality**

**creation of an endometrium unreceptive
to egg implantation**

no unplanned pregnancies

Norinyl provides multiple action for maximum assurance of success. It does not depend on ovulation inhibition alone for contraceptive effectiveness. The mechanism of action of combined hormonal therapy results in ovulation inhibition reinforced by other protective mechanisms, including a hostile cervical mucus¹⁻¹³ and an acceleration of endometrial changes.^{1-3,7-16} With Norinyl, no unplanned pregnancies have been reported to date when used as directed.



plus important supportive benefits that help her through those critical early months of oral contraception

low incidence of side effects

Low incidence of BTB and spotting, nausea and amenorrhea tends to minimize side effect problems and increases patient cooperation.

no confusion about dosage

An unbreakable "confusionproof" package makes it easy to adhere to prescribed dosage schedule: individually sealed tablets numbered from 1 through 20 *plus* monthly calendar record enables patient to double-check dosage intake by day and corresponding tablet number.



Contraindications: Thrombophlebitis or pulmonary embolism (current or past). Existing evidence does not support a causal relationship between use of Norinyl and development of thromboembolism. While a study which was conducted does not resolve definitively the possible etiologic relationship between progestational agents and intravascular clotting, it tends to con-

firm the findings of the Ad Hoc Advisory Committee appointed by the Food and Drug Administration to review this possibility. Cardiac, renal or hepatic dysfunction. Carcinoma of the breast or genital tract. Patients with a history of psychic depression should be carefully studied and the drug discontinued if depression recurs to marked degree. Patients with a history of cerebral vascular accident.

Warning: Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn.

Precautions: By May 1963, experience with norethindrone 2 mg.—mestranol 0.1 mg. had extended over 24 months. Through miscalculation, omission or error in taking the recommended dosage of Norinyl, pregnancy may result. If regular menses fail to appear and treatment schedule has not been adhered to, or if patient misses two menstrual periods, possibility of pregnancy should be resolved before resuming Norinyl. If pregnancy is established, Norinyl should be discontinued during period of gestation since virilization of the female fetus has been reported with oral use of progestational agents or estrogen. When lactation is desired, withhold Norinyl until nursing needs are established. Existing uterine fibroids may increase in size. In metabolic or endocrine disorders, careful clinical preevaluation is indicated. A few patients without evidence of hyperthyroidism had elevated serum protein-bound iodine levels, which in the light of present knowledge, does not necessarily imply hyperthyroidism. Protein-bound iodine increased following estrogen administration. Bromsulphalein retention has occurred in up to 25% of patients without evidence of hepatic dysfunction. Studies from 24-hour urine collections have shown an increase in aldosterone and 17-

ketosteroids and decrease in 17-hydroxycorticoid levels. Thus, Norinyl should be discontinued prior to and during thyroid, liver or adrenal function tests. Because progestational agents may cause fluid retention, conditions such as epilepsy, migraine and asthma require careful observation. Thus far no deleterious effect on pituitary, ovarian or adrenal function has been noted; however, long-range possible effect on these and other organs must await more prolonged observation. Norinyl should be used with caution in patients with bone, renal or any disease involving calcium or phosphorus metabolism. **Side Effects:** Intermenstrual bleeding; amenorrhea; symptoms resembling early pregnancy, such as nausea, breast engorgement or enlargement, chloasma and minor degree of fluid retention (if these should occur and patient has not strictly adhered to medication plan, she should be tested for pregnancy); weight gain; subjective complaints such as headache, dizziness, nervousness, irritability; in a few patients libido was increased. In a total of 3,090 patients, 2.2% discontinued medication because of nausea.

NOTE: See sections on contraindications and precautions for possible side effects on other organ systems.

Dosage and Administration: One Norinyl tablet orally for 20 days, commencing on day 5 through and including day 24 of the menstrual cycle. (Day 1 is the first day of menstrual bleeding.)

Availability: Dispensers of 20 and 60 tablets; bottles of 100.

References: 1. Council on Drugs. JAMA 187:664 (Feb. 29) 1964. 2. Bravans, F. E.: Canad Med Ass J 92:287 (Feb. 6) 1965. 3. Goldzieher, J. W.: Med Clin N Amer 48:529 (Mar.) 1964. 4. Cohen, M. R.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965. 5. Hammond, G. O.: Ibid. 6. Rice-Wray, E., Goldzieher, J. W., and Aranda-Rosell, A.: Fertil Steril 14:406 (Jul.-Aug.) 1963. 7. Goldzieher, J. W., Moses, L. E., and Ellis, L. T.: JAMA 180:359 (May 9) 1962. 8. Kemper, R. D.: GP 29:88 (Jan.) 1964. 9. Tyler, E. T.: JAMA 187:562 (Feb. 22) 1964. 10. Rudel, H. W., Martinez-Manautou, J., and Magueo-Topete, M.: Fertil Steril 16:158 (Mar.-Apr.) 1965. 11. Flowers, C. E., Jr.: N Carolina Med J 25:139 (Apr.) 1964. 12. Goldzieher, J. W.: Appl Ther 6:503 (June) 1964. 13. The Control of Fertility. Report adopted by the Committee on Human Reproduction of the American Medical Association. JAMA 194:462 (Oct. 25) 1965. 14. Flowers, C. E., Jr.: JAMA 188:1115 (June 29) 1964. 15. Merritt, R. L.: Appl Ther 6:427 (May) 1964. 16. Newland, D. O.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965.

norethindrone—an original steroid from
SYNTEX
LABORATORIES INC., PALO ALTO, CALIF.

Norinyl[®] tablets

(norethindrone 2 mg. & mestranol 0.1 mg.)

for multiple contraceptive action



fluocinolone acetonide — an original steroid from

SYNTEX 
LABORATORIES INC., PALO ALTO, CALIF.

controls infected inflammatory dermatoses that start from scratch



Neo-Synalar®
(fluocinolone acetonide-neomycin sulfate cream)
Cream

The "itch-scratch" cycle usually associated with inflammation often results in infected dermatoses because broken skin surfaces are particularly vulnerable to pathogenic bacteria.¹ To treat infected inflammatory dermatoses, Neo-Synalar Cream combines the most active topical corticosteroid with a highly reliable antibiotic generally reserved for topical application.

In Neo-Synalar, fluocinolone acetonide controls the inflammation and provides rapid relief from associated pruritus. At the same time, its antibacterial component—neomycin—combats superficial infection caused by many gram-positive and gram-negative bacilli² that often colonize and thrive on abraded skin.¹

A specially formulated vanishing cream base that is greaseless and odor free makes Neo-Synalar cosmetically appealing, and encourages greater patient cooperation.

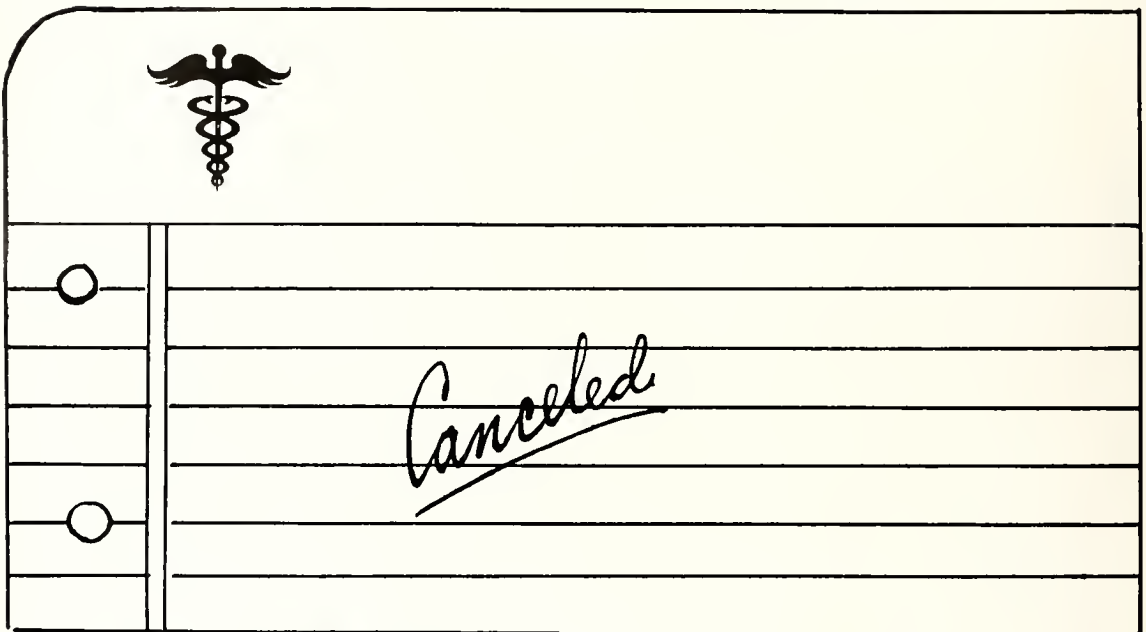
controls the infection

stops the scratch

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of its components. **Precautions:** Neomycin rarely produces allergic reactions. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. **Side Effects:** Side effects are not ordinarily encountered with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Neo-Synalar under certain conditions. **Availability:** Neo-Synalar Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

References: 1. Pillsbury, D. M., Shelley, W. B., and Kligman, A. M.: A manual of cutaneous medicine, Philadelphia, Saunders, 1961, p. 79. 2. Barber, M., and Garrod, L. P.: Antibiotic and chemotherapy, Baltimore, Williams and Wilkins, 1963, p. 111.

AN EMPTY APPOINTMENT BOOK . . .



because you're sick or hurt and can't work.

Even for a short time, an empty appointment book will mean some financial loss. But if disability stretches into months, perhaps years, then you can well realize what this could mean to your practice, your savings and your investment program. Many professional men in North Carolina have relied on Mutual of Omaha's INCOME PROTECTION PLAN to help prevent this kind of situation from ever happening. It's lost-cost coverage that provides generous monthly cash benefits (in the amount

you select) when you're laid up by illness or injury. These cash payments are "tax-free" to spend any way you decide: to help meet your family's regular living expenses . . . to help keep your nurse on the payroll . . . even to help pay medical bills. Get in touch with your local Mutual of Omaha representative today . . . or send the coupon below for complete free details and low cost on this program of personal protection for professional men.

J. A. MORAN
General Agent
810 Princess Street
Wilmington, N. C. 28402

G. A. RICHARDSON
General Agent
720 Peters Creek Parkway
Winston-Salem, N. C. 27102

J. P. GILES
General Agent
760 Merrimon Avenue
Asheville, N. C. 28804

*The Greatest Name in
Health Insurance*



MUTUAL OF OMAHA INSURANCE COMPANY
Life Insurance Affiliate: United of Omaha
Home Office: Omaha, Nebraska

Mutual of Omaha Insurance Company
3316 Farnam, Omaha, Nebr. 68131

Please rush full details on Mutual of Omaha's low-cost Income Protection Plan for professional men.

Name

Address

City

State Zip Code



"Yes, Doctor, the pain is gone."

■ Despite introduction of synthetic substitutes, efficacy of 'Empirin' Compound with Codeine remains unchallenged.

'Empirin'® Compound with Codeine Phosphate gr. ½ No. 3

Each tablet contains: Codeine Phosphate gr. ½ (Warning—May be habit forming), Phenacetin gr. 2½, Aspirin gr. 3½, Caffeine gr. ½.



Keeps the Promise of Pain Relief

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

**It's easy
for children to get
otitis media...**



and Gantanol Suspension is a good way to help them get well

proven effectiveness against major U.R.I. pathogens including beta-hemolytic strep

With Gantanol (sulfamethoxazole), bacteriologic conversion rates for beta-hemolytic streptococci are comparable to those generally seen with penicillin, and apparently superior to those cited in the literature for erythromycin and the broad-spectrum antibiotics.^{1,2} With conversion rates ranging from a high of 96% in 229 patients² and 98% in 96 cases³ to 65% in 105 cases,^{5,6} Gantanol (sulfamethoxazole) Suspension is an effective alternative therapy in patients sensitive to penicillin, the drug of choice in known beta-hemolytic streptococcal infections.

In addition to this effectiveness against beta-hemolytic streptococci,¹⁻⁹ bacteriologic conversion rates have averaged 69% for *D. pneumoniae* (103 of 150 patients),^{3,6,7} 78% for *H. influenzae* (42 of 54 patients),^{3,4,7} and 67% for *Staph. aureus* (76 of 113 patients).^{3,4,6,7} It is this wide spectrum of activity which makes Gantanol (sulfamethoxazole) Suspension a good choice in acute pharyngitis, tonsillitis and otitis media.

β-hemolytic strep



Staph. aureus



D. pneumoniae



H. influenzae



therapy generally uncomplicated by side effects

Over 8 out of 10 U.R.I. patients—87% of 2231 patients—showed an excellent to satisfactory clinical response to Gantanol (sulfamethoxazole).¹⁻¹³ Such favorable results are even more meaningful in view of the fact that only 1.1% of the more than 2000 cases cited discontinued therapy because of side effects. Of the total side effects reported (4.6%), most were mild and included rash, urticaria, itching, dizziness, headache, diarrhea, nausea and vomiting, shivering sensation, skin discoloration and crystalluria.¹⁻¹³

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Acute and chronic respiratory and urinary tract bacterial infections due to susceptible microorganisms. At present penicillin is considered the drug of choice in acute group A beta-hemolytic streptococcal infections; however, Gantanol (sulfamethoxazole) has shown an effectiveness approaching that of penicillin in a large number of patients. If employed in such infections, it is important that therapy be continued in the usual recommended dosage for a period of at least 10 days.

Contraindicated in sulfonamide-sensitive patients, pregnant females at term, premature infants or infants during first 3 months of life.

Warnings: Use only after critical appraisal in patients with liver damage, renal damage, urinary obstruction or blood dyscrasias. If toxic or hypersensitivity reactions or blood dyscrasias occur, discontinue therapy. In intermittent or prolonged therapy, blood counts and liver and kidney function tests should be performed. Data insufficient on prolonged or recurrent therapy in chronic renal diseases of children.

Precautions: Observe usual sulfonamide therapy precautions, including maintenance of an adequate fluid intake. Use with caution in patients with histories of allergies and/or asthma. Patients with impaired renal function should be followed closely since renal impairment may cause excessive drug accumulation. Occasional failures may occur due to resistant microorganisms. Not effective in virus or rickettsial infections.

Adverse Reactions: Following may occur: headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, Stevens-Johnson syndrome, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Dosage: *Children*—1 teasp./20 lbs initially, followed by ½ teasp./20 lbs b.i.d. *Adults*—4 teasp. initially, followed by 2 teasp. b.i.d. or t.i.d., depending upon severity of infection.

How Supplied: Suspension 10%, 0.5 Gm sulfamethoxazole/5 cc teasp., cherry-flavored, bottles of 16 oz.

References: 1. Braden, B.; Colmore, J. P., and Cummings, M. M.: *Antimicrobial Agents Annual*—1960, p. 54. 2. Alban, J.: *Am. J. Dis. Child.*, 109:304, 1965. 3. Elia, J. C.: *Eye Ear Nose & Throat Month.*, 41:722, 1962. 4. Carter, C. H.: *Clin. Med.*, 71:1571, 1964. 5. Jackson, H.; Cooper, J.; Mellinger, W. J., and Olsen, A. R.: *Southwestern Med.*, 44:246, 1963. 6. Reichelderfer, T. E.: *Clin. Med.*, 71:1045, 1964. 7. Peters, J. H.: Scientific Exhibit presented at the Spring Meeting of the American Academy of Pediatrics, April 26-29, 1965. 8. Peters, J. H.: *Antimicrobial Agents and Chemotherapy*—1961, p. 406. 9. Braden, B., and Colmore, J. P.: *J. Oklahoma M. A.*, 57:7, 1964. 10. Chastain, P. J.: *J. Florida M. A.*, 48:816, 1962. 11. Grater, W. C.: *Antibiotics & Chemother.*, 12:450, 1962. 12. Exline, A. L.: *Colorado GP*, 5:(5), 11, 1963. 13. Patton, J. M.: *West. Med.*, 5:46, 1964.

for optimal therapeutic response, remember the initial loading dose each time you prescribe Gantanol (sulfamethoxazole) Suspension

Gantanol®
(sulfamethoxazole)
Suspension

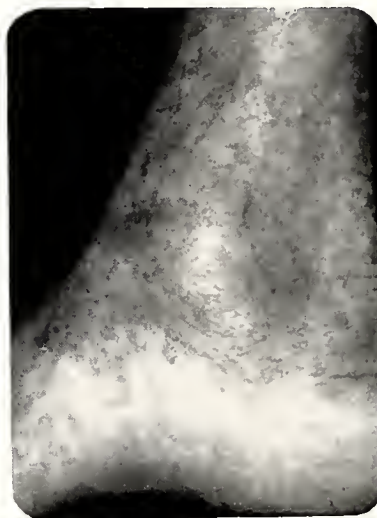
Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110



Eczema of many years... controlled in two weeks



Before treatment



*After treatment —
with ARISTOCORT Topical
Ointment 0.1% for two weeks*

ARISTOCORT® Triamcinolone Acetonide Topicals have proved exceptionally effective in the control of various forms of eczema: allergic, atopic, nummular, psoriatic, and mycotic.

In most cases responsive to topical ARISTOCORT, the 0.1% concentration is sufficiently potent. The 0.5% concentration provides enhanced topical activity for patients requiring additional potency for proper relief.

Administration and Dosage: Apply sparingly to the affected area 3 or 4 times daily. Some cases of psoriasis may be more effectively treated if the 0.1% Cream or Ointment is applied under an occlusive dressing.

Contraindications: Tuberculosis of the skin, herpes simplex, chicken pox and vaccinia.

Precautions and Side Effects: Do not use in the eyes or in the ear (if drum is perforated). A few individuals react unfavorably under certain conditions. If side

effects are encountered, the drug should be discontinued and appropriate measures taken. Use on infected areas should be attended with caution and observation, bearing in mind the potential spreading of infection and the advisability of discontinuing therapy and/or initiating antibacterial measures. Generalized dermatological conditions may require systemic corticosteroid therapy. Steroid therapy, although responsible for remissions of dermatoses, especially of allergic origin cannot be expected to prevent recurrence. The use over extensive body areas, with or without occlusive nonpermeable dressings, may result in systemic absorption. Appropriate precautions should be taken. When occlusive nonpermeable dressings are used, miliaria, folliculitis and pyoderma will sometimes develop. Localized atrophy and striae have been reported with the use of steroids by the occlusive technique. When occlusive nonpermeable dressings are used, the physician should be aware of the hazards of suffocation and flammability. The safety of use on pregnant patients has not been firmly established. Thus, do not use in large amounts or for long periods of time on pregnant patients.

Available in 5 Gm. and 15 Gm. tubes and ½ lb. jars.

PHOTOGRAPHS COURTESY OF M. H. NIERMAN, M.D.

Aristocort®

Topical Ointment 0.1% and Cream 0.1%, 0.5%
Triamcinolone Acetonide

Also available in foam form.



LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

what time is it?

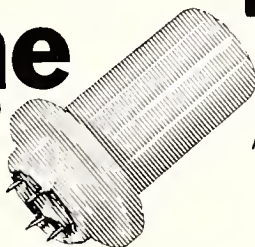
For the past
two years
there's been
one new case
of active tuberculosis
reported for every
four thousand
of U.S. population.

it's time to tine.

Tuberculin, Tine Test

(Rosenthal)

Lederle



Available in 5's and 25's.
Order now
from your pharmacist
or your Lederle
representative.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

414-6-4046R



Look how many ways
Thorazine®
brand of
chlorpromazine
 can help

	Tranquilizer	Potentiator	Antiemetic
Agitation	●		
Alcoholism	●		●
Anxiety	●		
Cancer patients	●	●	●
Severe neurodermatitis	●		
Drug addiction withdrawal symptoms	●		●
Emotional disturbances (moderate to severe)	●		
Nausea & vomiting	●		●
Neurological disorders	●		
Obstetrics	●	●	●
Pain	●	●	●
Pediatrics	●	●	●
Porphyria	●	●	
Psychiatric disorders	●		
Hiccups—refractory	●		
Senile agitation	●		
Surgery	●	●	●
Tetanus	●	●	

'Thorazine' is useful as a specific adjuvant in the above named conditions.

The following is a brief precautionary statement. Before prescribing, the physician should be familiar with the complete prescribing information in SK&F literature or PDR. **Contraindications:** Comatose states or the presence of large amounts of C.N.S. depressants. **Precautions:** Potentiation of C.N.S. depressants may occur (reduce dosage of C.N.S. depressants when used concomitantly). Antiemetic effect may mask other conditions. Possibility of drowsiness should be borne in mind for patients who drive cars, etc. In pregnancy, use only when necessary to the welfare of the patient. **Side Effects:** Occasionally transitory drowsiness; dry mouth; nasal congestion; constipation; amenorrhea; mild fever; hypotensive effects, sometimes severe with

I.M. administration; epinephrine effects may be reversed; dermatological reactions; parkinsonism-like symptoms on high dosage (in rare instances, may persist); weight gain; miosis; lactation and moderate breast engorgement (in females on high dosages); and less frequently cholestatic jaundice. Side effects occurring rarely include: mydriasis; agranulocytosis; skin pigmentation, lenticular and corneal deposits (after prolonged substantial dosages).

For a comprehensive presentation of 'Thorazine' prescribing information and side effects reported with phenothiazine derivatives, please refer to SK&F literature or PDR.

Smith Kline & French Laboratories 

INDEX TO ADVERTISERS

Abbott Laboratories	XXVI, XXVII, XXVIII	Mutual of Omaha Insurance Co.	LII
Ames Company, Inc.	XXIII	Neisler Laboratories, Inc.	XVI, XVII, XXXVI, XXXVII
Appalachian Hall	XLIII	Parke Davis & Co.	Third Cover
Arch Laboratories	XLII	Parkwood Hospital	XIX
Associated Credit Bureaus of N. C.	XIII	Peachtree Hospital	XLIII
Blue Shield Plans of N. C.	Reading	Pharmaceutical Manufacturers Ass'n.	XLIV
Bristol Laboratories	XXIX	Pinebluff Sanitarium	I
Burroughs Wellcome & Company	Insert	Pitman-Moore	XXXVIII, XXXIX
Carolina Surgical Supply Co.	XXV	Wm. P. Poythress	XLII
Ciba Pharmaceutical Co.	XII	Professional Services Co.	Reading
Coca-Cola Co.	XXII	Riker Laboratories	XXI
J. L. Crumpton	Reading	A. H. Robins	Insert
Dairy Councils of N. C.	XLI	Roche Laboratories ...	Fourth Cover, Insert
Dorsey Laboratories ..	XXXIII, LVI, Inserts	Saint Albans Psychiatric Hospital	XIII
DuPont de Nemours, E. I. & Co. ..	V, VI, VII	Searle, G. D. Company	VIII, IX
Geigy Pharmaceuticals	XLVI, XLVII, Inserts	Smith, Kline & French Company	LIV
Glenbrook Laboratories	XL	Syntex Laboratories, Inc.	XLVIII, XLIX, L, LI
Golden, Ralph J. Insurance	XIV	Tucker Hospital, Inc.	XXV
Highland Hospital, Inc.	XXII	Valentine Co., Inc.	XXVIII
Hynson, Westcott and Dunning, Inc.	XVIII	Wachtel's, Inc.	Reading
Jones & Vaughan, Inc.	III	Walker Laboratories	XX
Lederle Laboratories	X, XI, XLV, LIII, Insert	Winchester Surgical Supply Company Winchester-Ritch Company	I
Lilly, Eli & Company ...	First Cover, XXIV, XXXII, Reading, Inserts	Winthrop Laboratories	Second Cover
Wm. S. Merrell Co.	XXX, XXXI	Wyeth Laboratories ..	XV, XXXIV, XXXV

It works.

when it counts...

Chloromycetin[®]

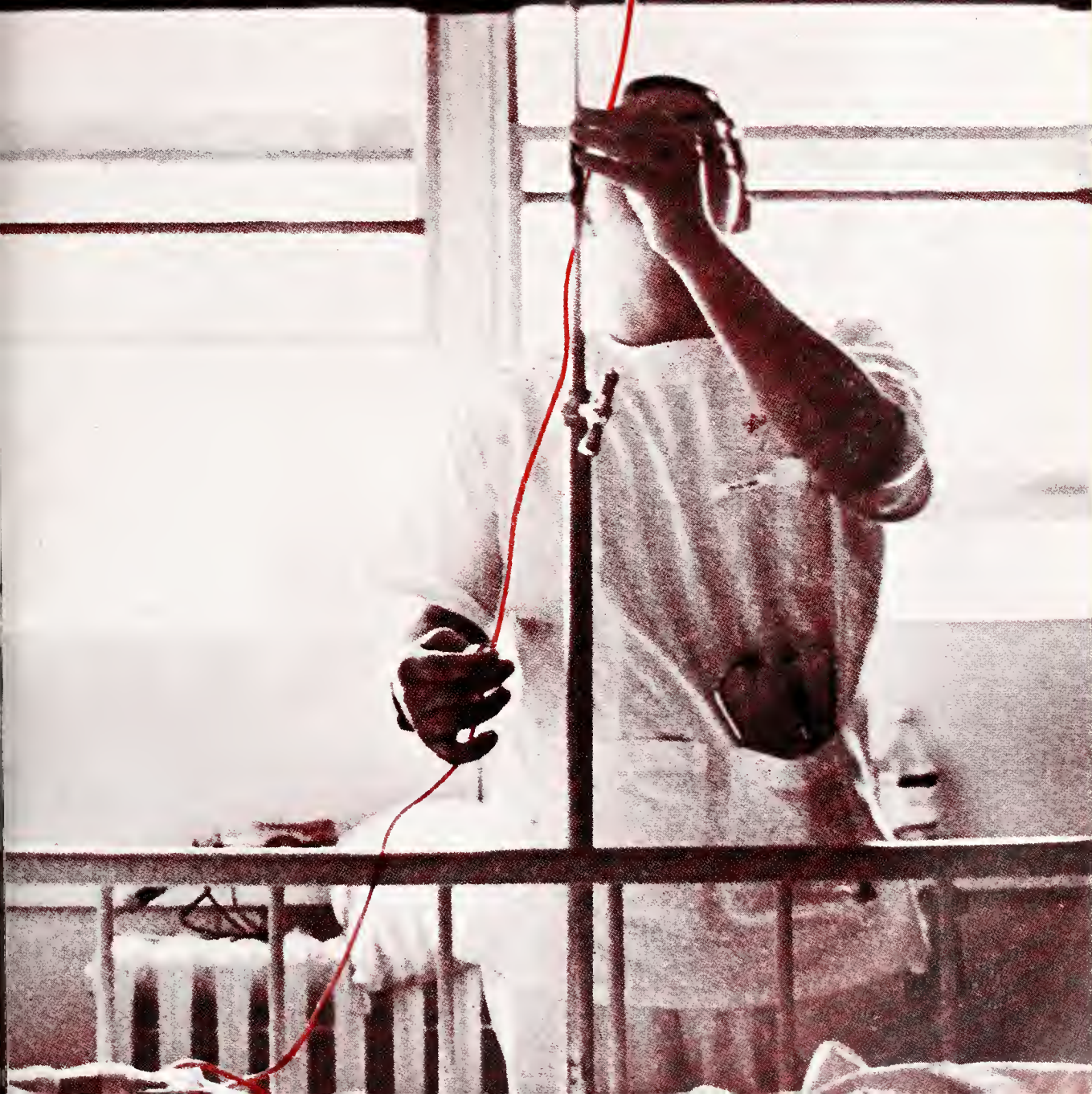
(chloramphenicol)

PARKE-DAVIS

PARKE, DAVIS & COMPANY, Detroit, Michigan 48232

Complete information for usage
available to physicians upon request.

©1966



For the tense patient 1 ta

t.i.d.



who can't sleep

h.s.



remember the
extra tablet at bedtime

Valium
(diazepam)
Roche®

Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Infants; patients with history of convulsive disorders or glaucoma.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly patients (not more than 1 mg, one or two times daily) to preclude ataxia or oversedation. Advise patients against possibly hazardous procedures until correct maintenance dosage is established; driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. Warn patients of possible combined effects with alcohol. Safe use in pregnancy not established. Observe usual precautions in impaired renal or hepatic function and in patients who may be suicidal; periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, hyperreflexia, stimulation, sleep disturbances, hallucinations); changes in EEG patterns. Abrupt cessation after prolonged over-dosage may produce withdrawal symptoms similar to those seen with barbiturates, meprobamate or chlor-diazepoxide HCl.

Dosage—Adults: Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10-mg t.i.d. or q.i.d. Geriatric patients: 1 or 2 mg/day initially, increase gradually as needed.

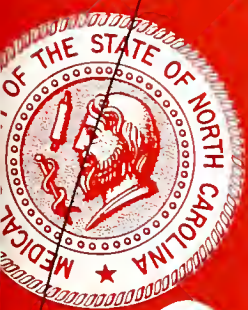
Supplied: Tablets, 2 mg, 5 mg and 10 mg; bottles of 50 for convenience and economy in prescribing.



Roche Laboratories
Division of Hoffmann-La Roche
Nutley, N.J. 07110

NORTH CAROLINA

February, 1967
Vol. 28 No. 2



MEDICAL JOURNAL

PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

IN THIS ISSUE:

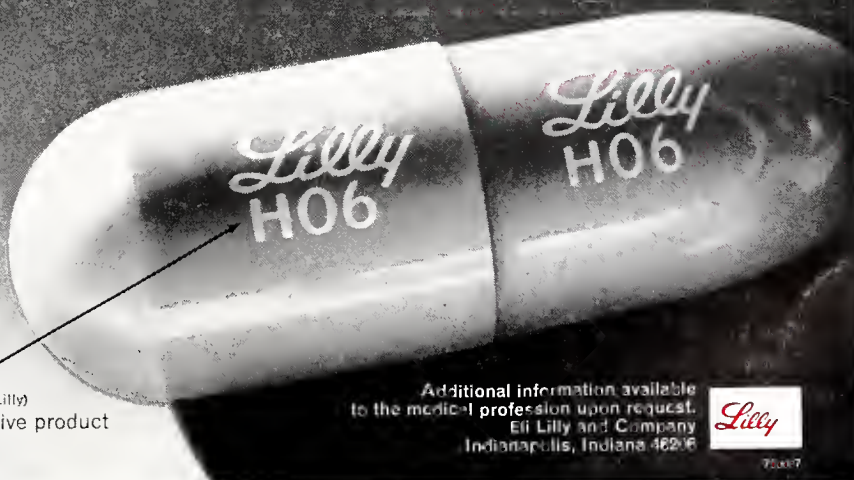
Revised Concepts in Emergency Medical Care

FRANCIS C. JACKSON, M.D.

DIVISION OF
HEALTH AFFAIRS LIBRARY

Something special Darvon[®] Compound-65

Each Pulvule[®] contains 65 mg. propoxyphene hydrochloride,
227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.



IDENTI-CODE[™]
(formula identification code, Lilly)
provides quick, positive product
identification.

Additional information available
to the medical profession upon request.
Eli Lilly and Company
Indianapolis, Indiana 46206

Lilly

75007

When the stagnant sinus must be drained...



Transillumination of the sinuses — diffuse shadow on right side of face indicates unilateral maxillary sinusitis.

In the common cold, Neo-Synephrine is unsurpassed for reducing nasal turgescence. It stops the stuffy feeling at once. It opens sinus ostia to re-establish drainage and lessen the chance of sinusitis. With Neo-Synephrine, in the concentrations most commonly used, decongestion lasts long enough for extended breathing comfort, without endangering delicate respiratory tissue. Systemic side effects are virtually unknown. There is little rebound tendency.

Neo-Synephrine[®] HCl

Brand of phenylephrine hydrochloride

is available in a variety of forms,
for all ages:

- $\frac{1}{8}\%$ solution for infants
- $\frac{1}{4}\%$ solution for children and adults
- $\frac{1}{4}\%$ pediatric nasal spray for children
- $\frac{1}{2}\%$ solution for adults
- $\frac{1}{2}\%$ nasal spray for adults
- $\frac{1}{2}\%$ jelly for children and adults
- 1% solution for adults (resistant cases)

Also NTZ[®] Solution or Spray
Antihistamine-decongestant

NORTH CAROLINA MEDICAL JOURNAL

OWNED AND PUBLISHED BY

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 28

FEBRUARY, 1967

NUMBER 2

Revised Concepts in Emergency Medical Care

FRANCIS C. JACKSON, M.D.*

PITTSBURGH, PENNSYLVANIA

There are definite changes in professional philosophy which may lead to a reorganization of emergency medical services in today's American community.¹ Surveys by the American College of Surgeons, the U. S. Public Health Service, and the American Medical Association have recently urged that new standards of equipment, services, and professional training be adopted.²⁻⁸ These concepts are not all necessarily new, but are nevertheless timely since the problems remain unsolved.

Current Assessment of Emergency Medical Care

In a number of ways the magnitude of the medical emergencies occurring within the community and the hospital itself has outstripped the capacity and the capability of the health professions to respond effectively and within the full measure of their resources at all times. The medical profession particularly has failed to consistently exercise leadership for governmental and volunteer agencies that are expected to supply supporting services in an emergency when injuries or medical catastrophies occur. This has been compounded by a certain disorganization, and a neglect of effective resuscitative and emergency procedures within the hospital itself.

In a recent report of a survey of military

medical care as practiced in South Vietnam, a consultant to the Armed Forces made this enlightening statement: "An American casualty in Vietnam receives better emergency medical care than if he had received the same injury on the front steps of my hospital."⁹ The American serviceman is rescued by trained corpsmen, provided with prompt professional first aid, and transported rapidly to a medical installation manned by certified specialists in all disciplines. The effectiveness of this highly trained military team is reflected in the mortality rate of only 1.2% in South Vietnam, as compared to more than 4.6% in World War II and 2.4% during the Korean episode.

The growing concern of community authorities, health and welfare agencies, the United States Public Health Service, and others^{1,10-13} even suggests that emergency medical services may not always be timely or of satisfactory quality. Unfortunately, whatever the reasons for any deficiency in health services, the medical profession bears the brunt of criticism. Current national advertising by one of the insurance companies provides a public admonition and urges citizens to investigate their hospitals, ambulance services, and blood banks concerning their capabilities of meeting emergencies.¹²

It has been estimated that 42% of the annual deaths in the United States (now nearing 2,000,000) may possibly be reversible if adequate resuscitation and emergency medical care were immediately available.¹ This figure would exceed the mortality of a number of infectious diseases. The majority of such deaths fall into two major categories, *trauma* and *coronary artery disease*.

Read before the First General Session, Medical Society of the State of North Carolina, Asheville, May 2, 1966.

*Chairman, Committee on Disaster Medical Care, Council on National Security, American Medical Association and Chairman, Subcommittee on Disaster Surgery, Trauma Committee, American College of Surgeons.

Request for reprints to Veterans Administration Hospital, University Drive, Pittsburgh, Pa. 15240.

While only 10% of persons dying of heart attacks could be resuscitated outside an operating room by trained professional and nonprofessional teams,¹⁴ the management of accidental injury remains a fertile field for progress. In 1965 there were 105,000 accidental deaths and 10,500,000 injuries resulting in one or more days of lost activity at a cost estimated by the National Safety Council of 19 billion dollars.¹⁵ The management of trauma, therefore, is also a practical field of medical endeavor.

More scientific data are needed to accurately determine what organizational and professional attitudes should be developed. Studies are currently in progress to determine the feasibility of establishing a Research Center for Emergency and Disaster Medical Services in order to evaluate problems by the collection of data in a prospective survey. Such a survey might well establish organization, techniques, and procedures which would reduce the morbidity and mortality from accidental injury.

As has already been mentioned, it is apparent that sudden death in a hospital can be reduced by at least 10% by creating a professional team from the medical staff already available. An important and disturbing observation has been made that, in the area of heart disease, only 30% of patients dying of presumed heart attacks actually have demonstrable coronary or myocardial lesions.¹ Resuscitation, therefore, sometimes cannot be easily or even selectively applied by trained professionals.

The awareness that an organization for emergencies is necessary and that misdiagnosis of acute disease is possible would seem to strongly support the recommendation that a study of emergency medical services by doctors and lay leaders alike is necessary. There is sufficient responsible information currently available to suggest glaring deficiencies in at least two major areas of emergency medical services: *the ambulance service or transportation* afforded the acutely injured or sick, and *the emergency room* of the hospital. The first is largely a community responsibility, while the latter concerns the physician and his hospital.

Ambulance Services

The Hampton Report of 1960 first called attention to the growing inadequacy of emergency transport.¹⁶ At that time only slightly more than one half of the cities surveyed utilized an adequate vehicle to convey the patient to the hospital; 25% of the ambulances had no equipment to provide first aid for fractures, hemorrhage, or wounds; a significant number of drivers and attendants had had no training; and while the vast majority of cities stated they were providing excellent handling of the injured, others were more candid and probably more honest when they severely downgraded their own services. These 34 cities rated their effectiveness at 1%-10%. One city suggested that proper care at the accident scene was reduced from 100% to 90% when other than police or firemen provided the first aid!

A more recent survey in the Pittsburgh area revealed only minimal changes in ambulance services as a result of the Hampton Report. A satisfactory trend, nevertheless, was noted by a survey conducted by the Health and Welfare Association of Allegheny County.¹⁰ Lack of suitable equipment was more evident. In the three categories of vehicles (volunteer, police and commercial ambulances) 22% lacked a pulmonary ventilator, 27% carried no splints, and 14% had no first aid kits. Less than one half of the vehicles had even minimal equipment as recommended by the Trauma Committee of the American College of Surgeons.¹⁰ Ambulances have not yet been redesigned to permit modern resuscitation (external cardiac massage) to be carried out while en route to a hospital.¹⁷ The commercial ambulances seemed to have the major training deficiencies. Prior to 1963 less than one half of all their ambulance attendants had had any first-aid training.

Of even greater importance is the state or local regulation of ambulance services. The Hampton Report indicated that only 105 of 865 cities had some ordinance covering training of ambulance drivers, and only 11 states had any form of an ambulance statute. Few if any communities effectively

coordinate all their ambulance services. In another report,⁶ only one half had radios, and none functioned from a central headquarters or dispatching center.

Dr. Roswell Brown of the Field Program of the American College of Surgeons recently re-emphasized that, despite general appreciation of the ambulance problem, in a majority of the states anyone can purchase a vehicle, call it an ambulance, charge for his services, and transport the sick and injured regardless of the quality of these services.¹⁸

While ambulance services are directly concerned with medical care, the responsibilities for supervision in most communities lie with the state and local health departments. Only recently have such agencies undertaken these responsibilities by providing training programs and instruction manuals.¹⁹ In many states these attempts by health officials to educate and train ambulance attendants represent unregulated and voluntary programs.⁶

The Doctor in an Emergency

The question of physicians performing as members of ambulance squads is still debatable. The original Hampton Report indicated that an intern accompanied the driver in very few cities. Recently in Baltimore renewed emphasis on physician participation in certain emergencies was reported by Wilder.²⁰ Since 1960, surgical house officers acting as "emergency squad doctors" are called to accidents by ambulance personnel of the Baltimore Fire Department, who are trained to assess the medical situation in every emergency. Such calls, averaging about six annually, bring a mobile "hospital unit" and a house officer from a participating district hospital. Of particular note is that most of such requests for help have been for entrapped victims. Sedatives and blood substitutes are administered at the scene in these severe injuries. The hospital usually receives a blood sample delivered by the police for pre-admission blood-typing and cross-matching. The importance of also alerting the hospital to the character and extent of the injury is of considerable assistance in the care of these patients. There have been no incidents of "on-the-spot" amputation, and the victims

are normotensive on arrival at the emergency room.

Even more evidence exists for such physician authority in terms of large natural disasters, where a disaster site may be identified with a larger number of injured. The rush to extract survivors from entrapment and dump them like cordwood into hospital emergency rooms has continued to plague hospital administrators and hospital disaster committees. The obvious omission of basic principles of first aid, and above all a priority of medical care in such instances, may well account for many, if not most, "dead on arrivals." The chaos at the "Constellation Fire" in Brooklyn, as reported by Shaf-ton,^{13,21} is the most momentous and tragic example of an abandonment of recognized principles of emergency medical care.

But what of just "calling for a doctor" in any emergency? The availability of physicians for a single emergency involving one individual is still an unsolved problem. In 1948 the American Medical Association recommended that an emergency call system be adopted by county medical societies. At the moment somewhat more than 500 of the 2000-odd societies have such a system, which is designed to serve people "who do not have a regular family physician or are unable to contact their physician, during an emergency."²²

In Allegheny County a commercial telephone service provides the 24-hour service when the office of the county society is closed, and is used to contact physicians from a roster comprising 23% of the membership. In an average month 75 calls were received, of which 55% resulted in service by a physician. Forty-four percent of these calls were considered bonafide emergencies, and 24% of the patients were finally hospitalized.¹⁰

These calls represent a very small volume of the total emergency services provided by physicians, but the report does indicate that where physicians are not immediately available, appreciable numbers of so-called emergencies are just that!

Rescue and Training Techniques

There is little accurate information currently available regarding deficiencies in

rescue services and particularly the effects on medical care of lay persons trained in first aid and resuscitation. Since its inception in the late 19th century, the Red Cross First Aid program has probably instructed more than 3,000,000 persons in these techniques. While this fine program cannot be criticized, questions are being asked regarding the infrequent application of first aid when it is most needed; such as in highway accidents.²³ Few well-trained rescue squads are available in many areas and even fewer communities provide satisfactory training for those charged with rescuing, transporting, or treating accident victims. The safe extraction of entrapped victims receives little attention. Only an occasional airport has special equipment to rescue airline passengers who may survive a crash on the runway, and practically none have the wherewithal (ladders, asbestos suits, bulldozers, etc.) to remove victims if fire begins to envelop the aircraft.

A considerable debate is now going on in professional circles with regard to the training of other than "high-risk" personnel in modern resuscitative techniques. The Red Cross Manual currently under revision may not contain a chapter on external cardiac massage. However, Wilder¹⁴ suggests that in a large measure this training and treatment was responsible for the 10% salvage of cardiopulmonary emergencies handled by the Baltimore City Fire Department. In a real sense, first aid is no longer just a practice of bandaging and splints. Courses must be more sophisticated in the retraining of personnel in order to provide even adequate emergency care.

Emergency Medical Communications

Communications remains a serious problem in emergency medical services, particularly during natural disasters when the factor of "overload" and stress on police and fire channels almost guarantees the exclusion of the physician and the hospital from any warning or alert. This problem is further compounded by the inability of health departments (the only health agency in governmental structure comparable to police and fire departments) to provide command, or direct emergency medical services. These

departments do not generally participate in medical care.

Only recently have hospitals, as a matter of service and self-protection, begun to install radio communications and monitor police radio traffic. But no centralized medical communications center providing daily emergency services exists in this country, unlike in a good many European cities.⁷

The Emergency Room

Deficiencies in emergency services still exist within accredited hospitals in part because the emergency room has changed its character. The patient load has increased in the past decade almost 400%, and only 40% of the visits are emergent or even urgent.

The Trauma Committees of the American College of Surgeons have surveyed many of these departments and have identified many defects in organization, equipment, procedures, and staffing. In the Scudder report,²¹ two thirds of the hospitals admitted their facilities were inadequate. The entrance to the emergency room may not be identified by a sign or other means in 20% of such institutions.⁵ One fourth of the departments had no central list of equipment and supplies. Only 50% may be able to restrict their care to emergencies.⁵

A certain lack of organization was also evident in the hospitals surveyed. Only one third of the departments had committees representing all disciplines, even though emergency problems involve psychiatry, pediatrics, and obstetrics in addition to the usual acute illnesses of medicine and surgery. In rural areas the percentage of hospitals with emergency rooms supervised by a committee was only 17%. The methods by which physicians cover the emergency room vary considerably. There may be a single individual, a rotated responsibility among the staff, or a contractual arrangement by which a group of physicians assumes complete charge. All have their advantages as well as defects.

While most hospitals indicate that resuscitation can promptly be instituted in their emergency rooms more careful inquiry does not necessarily support this reassurance. The most glaring deficiency is the delay in the ap-

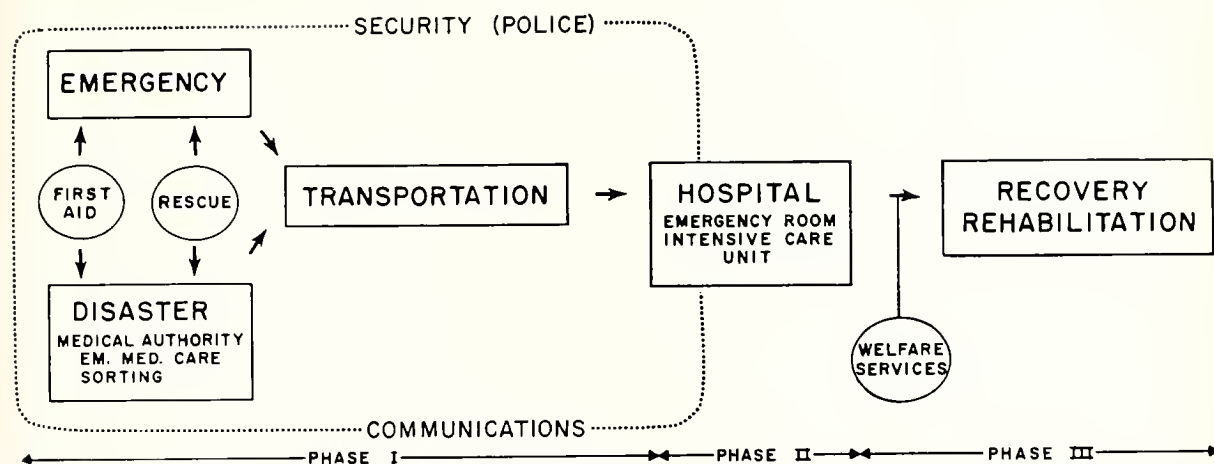


Fig. 1. The three phases of emergency medical care illustrated here emphasize the areas of responsibility. Physicians are urged to provide responsible supervision of medical care in the two phases which are outside of the hospital area.

pearance of the physician. Modern cardiopulmonary resuscitation requires a knowledgeable team to provide ventilation, vascular support, drugs, and expert decision such as when to counteract fibrillation in the ineffective heart. Ambulance squads have complained that they carry out resuscitative maneuvers and bring the patient into the emergency room only to witness a delay in continuity of resuscitation.²⁵ Ambulance attendants quickly learn which hospital emergency rooms respond promptly, and therefore they develop their own district emergency hospitals. In a sense, these people will "sort" seriously ill patients as a result of these experiences. The importance of this matter lies in the fact that more than 10% of patients admitted to emergency departments will immediately need some form of resuscitation or care.

The practice of channeling emergency problems to selected hospitals is also common in large urban areas. To a large extent distribution of acute disease determines the character of a hospital's emergency organization, equipment, and even its capabilities. As an example, almost 40% of all emergencies in Allegheny County are handled in only three of the 30 city hospitals.¹⁰ Together with the changing usage of emergency rooms, the need for sophisticated emergency room facilities in every hospital is open to serious question. A number of hospitals are opening their regular clinics in the evening in order to re-

store the effectiveness of their emergency departments.

Resuscitology

Since World War II anesthesia has grown dramatically as an important adjunct to hospital operation. It also has produced an important group of specialists who are daily concerned with the extremes of cardiopulmonary behavior. It is probably not remarkable, therefore, that anesthesiologists have indicated certain deficiencies in resuscitation as provided in areas of the hospital other than the operating room. The development of teams of physician specialists with equipment and procedures formerly associated with the operating suite, the cardiology or pulmonary clinics, and even the research laboratory, has been a natural and even essential evolution.

The important observation here is that such teams must be trained (and retrained), be highly motivated, and be available or intra-hospital emergencies will be handled no better than before the development of these new techniques. The recognition that an acutely ill patient must be treated for a wide variety of physiologic disturbances has suggested that resuscitation, or "resuscitology," may be a new subspecialty of medical practice within the hospital. The first one-year fellowship in this field is being offered by the Department of Anesthesia at the University of Pittsburgh.²⁶

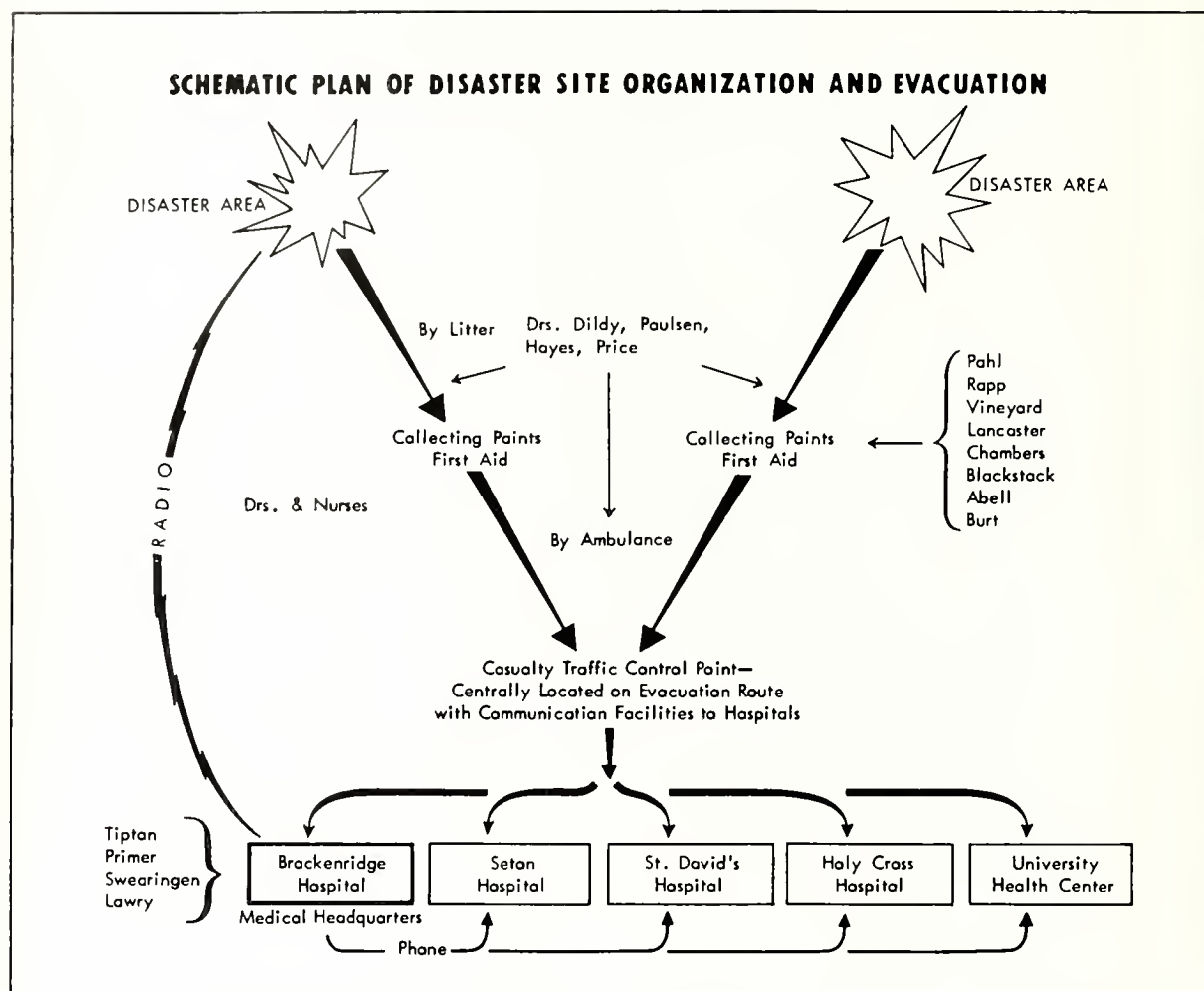


Fig. 2. In Travis County (Texas) the concepts of an effective disaster organization outlined in the text are well illustrated. Notice the use of disaster teams and a communications center. (Reproduced with permission of W. Tipton, M.D., Chairman, Travis County Committee on Disaster Medical Care, "Travis County Medical Society Plan for Disaster Medical Care", Journal of the Travis County Medical Society, Texas, 9:2, 1964).

Intensive Care

The Intensive Care Unit is now a full fledged facility in many hospitals. To be effective in reducing hospital morbidity and mortality, this unit should be operated by well-trained personnel and admit only those patients who may recover from an acute illness. Many hospitals have established intensive care areas merely for the convenience of the nursing service. A physician with experience in resuscitation may not be included in the organization. Intensive medical care is a 24-hour responsibility and requires a trained staff physician immediately available within the hospital. If he is available only by telephone

or has pressing duties in the hospital, such coverage is obviously inadequate.

Organizing for Community Emergencies

The disaster services provided by communities and their hospitals leave much to be desired. The tragic fact is that, despite the medical difficulties associated with major disasters which occur each year, errors in medical care are still blatantly repetitious. Most of this difficulty lies outside the hospital. Nevertheless, physicians and hospitals are derelict since little attention has been devoted to the medical aspects of disaster planning in all of its phases.

While intensive studies in emergency and

disaster medical care have yet to be initiated by any federal agency, certain basic deficiencies can be mentioned. These are concerned with the total emergency preparation by the community and not simply the medical aspects.

A primary problem is the failure to establish authority in time of disaster. Rescue is disorderly; first aid and sorting are seldom, if ever, practiced; and survivors are rushed to a nonalerted hospital. Security and traffic control are usually instituted after the immediate medical aspects of the disaster are over.

It is obvious that under certain disaster circumstances, the hospitals and physicians must have some direct control and responsibilities from the site of the catastrophe to the hospital entry. A recognized medical authority supported by a communications and transportation system is now a necessity, and much more advance planning is necessary.

Figure 1 indicates how a program for total emergency services could be visualized. The three phases (I-Disaster Site, II-Hospi-

tal, III-Rehabilitation) emphasize the basic locale of medical services over which physicians must exert direction and a greater degree of control. One emergency organization (Fig. 2) established in Travis County, Texas, by the County Medical Society has developed this concept in a similar fashion. However, it has the one defect of being limited to disasters and unfortunately is not utilized on a daily basis. Identifying the phases of emergency services provides a clearer understanding of the necessary responsibility and planning for efficient emergency services.

New York City, following the chaos of several disasters, has also developed a traffic control system for major emergencies. The plans include a first aid organization and medical authority at the disaster site (Fig. 3).

The Allegheny County Commissioners have given serious consideration to the development of stand-by emergency medical facilities at the Greater Pittsburgh Airport. This plan calls for sorting and priority of

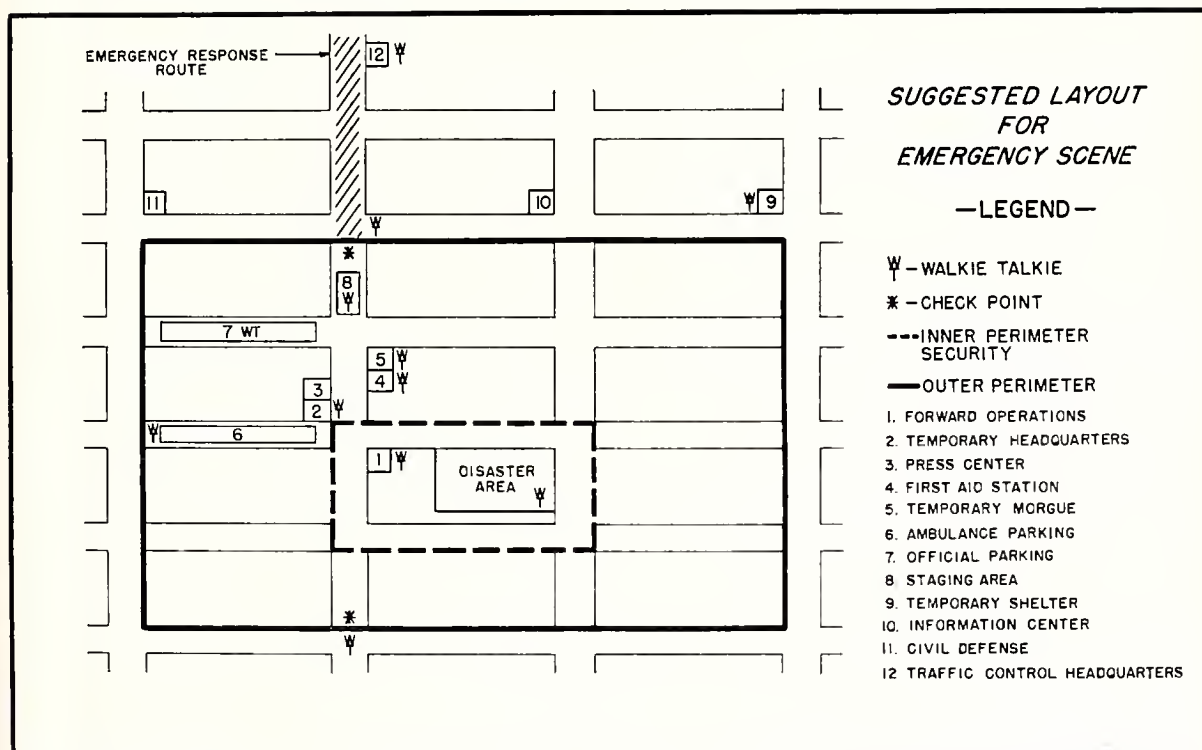


Fig. 3. The busy streets of a major city can be site of a major disaster. This layout for a disaster site has many fine suggestions including a first aid station and morgue. (Reproduced with permission of publisher, author, and Police Commissioner, City of New York from *Journal of Trauma*, 3:198, 1963).

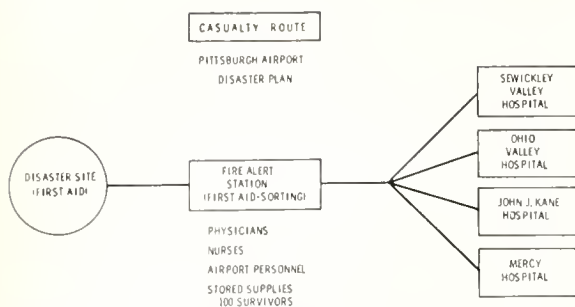


Fig. 4. Airports are vulnerable areas for major accidents. Illustrated is a functionally well designed emergency plan for a large, busy, metropolitan airport.

emergency medical care at the airport by physicians followed by an orderly distribution of survivors to four hospitals within five miles (Fig. 4) of the airport facilities.

Conclusions

Previous concepts of emergency medical services must be redesigned to provide more sophisticated medical care from the immediate stage of injury or acute illness, through the phases of hospitalization and rehabilitation. The physician must participate more effectively in all phases of organization and management of such emergency service. Resuscitology is a new and growing field within such services. More planning and support is needed for ambulance services, first aid, and the development of medical facilities at "high risk" areas in the community.

References

1. Safar, P.: Resuscitation—Controversial Aspects, An International Symposium, Springer (Berlin), 1963.
2. Accidental Death and Disability: the Neglected Disease of Modern Society. Division of Medical Science, National Academy of Sciences, National Research Council, Washington, D. C., 1966.
3. Emergency Department: A Handbook for the Medical Staff, Council on Service, Committee on Medical Facilities, American Medical Association, Chicago, 1966.
4. Kennedy, R. H.: Our Fashionable Killer: The Oration

- on Trauma, Bull Amer Coll Surg 40: 73-81 (March-April) 1955.
5. Owens, J. C.: Colorado Study of Emergency Treatment Facilities, Bi-Regional Emergency Medical Services Seminar, University of Nevada, Sept 29-30, 1965.
6. Owens, J. C., and Shaw, W. D.: Ambulance Service in Colorado, A-I-D 4: 6, 1966.
7. Safar, P.: Current Status of Resuscitation Practices In Prague and Moscow. Symposium on Cardiopulmonary Resuscitation Techniques: Perspectives in Training and Application, U. S. Department of Health, Education and Welfare, Public Health Service Publication No. 1276, 1965.
8. Standards for Emergency Department in Hospitals, Bull Amer Coll Surg 48: 112 (May-June) 1963.
9. Eiseman, B.: Personal communication.
10. Emergency Medical Care in Allegheny County, Health and Welfare Association of Allegheny County, Pittsburgh, 1965.
11. Health, Medical Care and Transportation of the Injured: Report of President's Committee for Traffic Safety, U. S. Government Printing Office, Washington, D. C., 1965.
12. Panic or Plan, New York, Metropolitan Life Insurance Co., 1965.
13. Shaftan, G. W.: Disaster and Medical Care, J Trauma 2: 111-116 (March) 1962.
14. Wilder, R. J., Jude, J. R., Kouwenhoven, W. D., and McMahon, M. C.: Cardiopulmonary Resuscitation by Trained Ambulance Personnel, JAMA 190: 531-534 (Nov 9 1964).
15. Pyle, H.: President of National Safety Council, Third Congress on Environmental Health Problems, American Medical Association, Chicago, April 4-5, 1966.
16. Hampton, O. P., Jr.: Transportation of the Injured Report of a Survey, Bull Amer Coll Surg 45: 55-59 (Jan-Feb) 1960.
17. Safar, P.: Ambulance Design and Equipment for Resuscitation, Arch Surg 90: 343-348 (March) 1965.
18. Brown, R.: Personal communication.
19. Gorings, D. D.: Ambulance Attendant Training Manual, Pennsylvania Department of Health, 1964.
20. Wilder, R. J., and McMahon, M. C.: Emergency Squad Doctor: A Plan for Handling Trapped Casualties, Maryland S Med J 12: 56-58 (Feb) 1963.
21. Shaftan, G. W., and Gollance H.: Disaster and Medical Care—A Lesson Learned, J Trauma 3: 199-205 (May) 1963.
22. Planning for Emergency Calls, AMA Council on Medical Services, Chicago, 1948.
23. Longhead, J. C.: Current Emergency Treatment of Acute Accidents, Southern Med J 58: 1083, 1965.
24. Skudder, P. A. McCarroll, J. R., and Wade, P. A.: Hospital Emergency Facilities and Services: A Survey, Bull Amer Coll Surg 46: 44-50 (March-April) 1961.
25. Owens, J. C.: Personal communication.
26. Safar, P.: Personal communication.

Music has a very happy effect in relieving the mind when fatigued with study. It would be well if every studious person were so far acquainted with that science as to amuse himself after severe thought, by playing such airs as have a tendency to raise the spirits, and to inspire cheerfulness and good humor.—William Buchan: Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicine, etc. Philadelphia, Richard Folwell, 1799, p. 59.

Congenital and Acquired Heart Disease: When Is There Need for Referral?

ROBERT N. HEADLEY, M.D.

WINSTON-SALEM

The accessibility of the latest cardiovascular diagnostic and therapeutic techniques to most practicing physicians may alter our current concepts of referral medicine. As the dissemination of new information increases, certain procedures heretofore performed only in medical centers will become virtually standard practice in the community hospital. If clinicians can be kept abreast of these current trends, increased selectivity in patient-referral can be anticipated. The trends discussed in this paper do not necessarily represent the views of my colleagues, nor may they totally agree with the principles advocated in other institutions, but in general the basic concepts outlined here are currently accepted by most cardiology groups.

Coronary Artery Disease

In the field of arteriosclerotic cardiovascular disease, and specifically in coronary insufficiency or angina, considerable investigative effort is in progress—and also, I might add, considerable controversy and divergence of opinion. Many cardiovascular-oriented internists doubt that myocardial ischemia resulting from coronary atherosclerosis can be improved by surgery. A frequently posed question is: "When should coronary arteriography be used?" In general, the recommendations for coronary visualization or arteriography are as follows:

1. Electrocardiographic evidence of anterior myocardial ischemia with severe angina.
2. Roentgenographic confirmation of the presence or absence of a coronary lesion in a young person with disabling chest pain when the diagnosis of angina is equivocal.
3. Angina decubitus that is not responsive

Read before the Section on Internal Medicine, Medical Society of the State of North Carolina, Asheville, May 3, 1966.

From the Department of Medicine, Bowman Gray School of Medicine of Wake Forest College.

Request for reprints to 300 South Hawthorne Road, Winston-Salem, N. C. 27103.

to the usual measures for control of pain. (This may be an indication for coronary arteriography and subsequent surgical intervention regardless of the electrocardiographic localization of the ischemia.)

Many cardiologists would contend that there are more indications for coronary arteriography and possible surgical treatment than the ones outlined here, and as more surgical experience is achieved, this may become true. The most commonly employed surgical procedures for coronary insufficiency are shown in Table 1.

Table 1
Current Surgical Procedures for Coronary Artery Insufficiency

1. Pericardial talcing.
2. Epicardial abrasion.
3. Internal mammary artery implant
 - a. Isolated.
 - b. With accompanying vein and fat.
4. Free omental graft.
5. Endarterectomy.
 - a. Without vein patch graft.
 - b. With vein patch graft.
6. Saphenous vein graft implant from aorta into posterior left ventricle.

Vineberg,^{1a,b} Effler,² Sewell,³ and others,^{4,5} have shown rather conclusively that in properly selected patients implantation of the internal mammary artery in the area of the left anterior descending coronary artery, with or without an accompanying pedicle graft, can improve symptomatology and survival at a surgical risk of less than 5 per cent. On the other hand, the patient with electrocardiographic changes indicating ischemia on the diaphragmatic or lateral aspect of the heart is certainly a questionable candidate for coronary visualization, since an internal mammary implant cannot usually be stretched to reach these areas of the heart. Vineberg^{1c} is now advocating free omental grafts to improve blood supply to these areas, and more recently attempts have been made to utilize a vein graft implanted between the aorta and the myocardium.⁵

These procedures are not well established or accepted, and it will probably be several years before we have adequate follow-up to determine their efficacy.

In a few select patients with localized arteriosclerotic lesions, particularly in the proximal coronary arteries, endarterectomy with patch graft may be the procedure of choice.^{6,7,8} I hasten to add, however, that few patients with arteriosclerotic coronary artery disease have a single proximal obstructive lesion without significant distal disease, and therefore this procedure will be applicable in only a few select cases.

In summary, surgical revascularization for coronary insufficiency holds promise, but at present the cases have to be screened and selected with great care, studied by selective coronary arteriography, and cautiously recommended for surgery.

Intracardiac Pacing and Cardioversion

Chardack⁹ and others^{10,11} have shown quite conclusively that cardiac pacing by either a catheter or surgically implanted electrodes can be lifesaving in certain cardiac arrhythmias. Generally, when complete heart block develops in a patient during myocarditis, cardiac surgery, or in the course of acute myocardial infarction, it is advisable to insert a transvenous bipolar pacemaker catheter into the right ventricle for the purpose of either constant or intermittent pacing (Table 2). These patients should be monitored quite closely in intensive care facilities, and once the complete heart block has been reversed, the catheter can be removed with relative ease and safety.

Other situations such as the onset of Stokes-Adams attacks secondary to complete heart block, permanent or intermittent, can present an acute emergency requiring the use of the transvenous pacemaker catheter followed by surgical implantation of a permanent pacemaker of one of the various commercial types. Although the latter procedure usually requires the skill of a cardiovascular surgeon, I believe that in time every community will have a physician familiar with the technique of passing the pacemaker catheter through a vein for temporary intracardiac pacing in acute situations. In many cases

Table 2

Indications for Intracardiac Pacing

- A. Temporary transvenous catheter pacemaker.
 1. Symptomatic complete heart block secondary to myocardial infarction, myocarditis, or cardiovascular surgery.
 2. Control of heart rate during surgery in patients with complete heart block.
 3. Failure of permanently implanted pacemaker.
 4. Complete heart block, delaying surgery, in a very young patient with congenital heart disease.
 5. Fixed sinus bradycardia with inadequate cardiac output.
- B. Surgically implanted pacemaker
 1. Permanent symptomatic complete heart block not responsive to drugs.
 2. Symptomatic, intermittent complete heart block not due to an acute process.
 3. Symptomatic bradycardia not due to an acute process and unresponsive to drugs.

the nearest medical center is too far away for the safe transferral of a patient having convulsions or in severe congestive failure secondary to permanent or intermittent complete heart block which may be amenable to cardiac pacing. To sustain life during these critical hours, a pacemaker catheter may have to be passed, since external cardiac pacing is not uniformly effective nor is it well tolerated by a conscious patient.

Direct Current Cardioversion of Arrhythmias

Direct current cardioversion of arrhythmias may well have to be performed in local communities, since there seems to be a plethora of such problems and it is becoming more fashionable to revert these arrhythmias electrically rather than pursue the cumbersome and often symptom-producing drug approach.

There are questions with regard to electrocardioversion that deserve comment. Are we using it too often without sound justification, or are we neglecting it? In general, without the expectation of maintaining a normal sinus mechanism following cardioversion, there is little justification for doing the procedure (Table 3). For example, if the patient has severe mitral stenosis and is in atrial fibrillation, one could hardly anticipate that a normal sinus mechanism could be maintained on tolerated maintenance doses of quinidine, even after electrical car-

Table 3

Contraindications (Relative or Absolute) to DC Cardioversion of Atrial Fibrillation or Flutter

1. Inability to tolerate anti-arrhythmic drugs.
2. Prior inability to maintain sinus mechanism after reversion.
3. Asymptomatic elderly patient with atrial flutter or fibrillation easily controlled by digitalis.
4. Older patient with slow ventricular rates.
5. Digitalis intoxication.
6. Uncorrected mechanical problem producing the arrhythmia, i.e., mitral stenosis or insufficiency.

dioversion. In this situation, cardioversion should be attempted only after surgical relief of the mechanical obstruction has decompressed the left atrium and made the patient a more suitable prospect for maintenance in a sinus mechanism.¹²

Let me add that there is nothing miraculous about a cardioversion unit. It does not necessarily endow the recipient with a permanent regular heart beat, and the maintenance dosage of a drug such as quinidine will have to be prescribed just as with reversion by drugs.

Hypertension

Since much current interest has been focused on the renovascular etiology of hypertension, certain clinical clues should arouse suspicion (Table 4). If either the history,

Table 4

Clinical Features Suggestive of Renovascular Hypertension

1. Young age at onset
2. Acceleration of previously stable hypertension at any age
3. Onset of hypertension following abdominal trauma
4. Onset of hypertension associated with acute abdominal pain
5. Abdominal bruit
6. Brief duration of hypertension

physical examination, or certain diagnostic techniques disclose a renovascular lesion producing renal ischemia with activation of the renin-angiotensin system, renal arteriography is probably indicated. The diagnostic techniques referred to are (1) minute intravenous pyelogram with mannitol wash-out; (2) radioactive renogram and/or Renografin clearance; (3) split function renal evaluation such as the Howard test; (4)

elevation of the peripheral venous or renal vein renin-angiotensin level. Renal arteriograms can be obtained easily now by using a percutaneous femoral Seldinger approach and selective renal arteriography accomplished (Fig. 1).

Another fascinating development in the detection of forms of hypertension that are potentially curable by surgery is the work of Conn and his group¹³ concerning aldosterone-secreting tumors. It is Conn's hypothesis that a functionally secreting aldosteronoma causing hypertension can be present long before hypokalemic alkalosis or hypernatremia develop (Table 5). Therefore it is advocated

Table 5

Blood Renin and Aldosterone Values in Hypertension

	Renin	Aldosterone
Essential hypertension	Normal	Normal
Renovascular hypertension	Increased	Normal or increased
Primary aldosteronism	Decreased	Increased

that measurements of secretory and/or excretory aldosterone rates be made in addition to venous renin levels. Conn postulates that the aldosterone level should be elevated in the presence of a functioning tumor of this type, with feedback suppression of the renal secretion of renin. Only certain of the medical centers are capable of measuring these substances with any degree of accuracy at this time, but I suspect that these techniques will become more widely used and generally accepted in the future.

Also in the field of hypertension, there are certain cases due to functional pheochromocytoma which are very resistant to diagnosis. Pheochromocytomas can be present for years with periods of latency alternating with exacerbations, and multiple studies including histamine, tyramine or glucagon stimulation, Regitine test and/or measurement of blood or urinary catecholamines, urine vanillyl mandelic acid, or metanephrines can be performed and the diagnosis still be overlooked. This problem can be extremely perplexing at times, and if the lesion is clinically suspected, the patient should be referred to a facility where these determinations are available.

Table 6

The More Common Surgically Amenable Congenital Heart Defects Found in Adults

Acyanotic

Atrial septal defect
Aortic coarctation
Ventricular septal defect
Patent ductus arteriosus
Pulmonic stenosis
Endocardial cushion defect
Coronary arteriovenous shunt
Coronary sinus fistula

Cyanotic

Pulmonic stenosis and atrial septal defect
Tetralogy of Fallot
Palliative surgery for other conditions with decreased pulmonary flow
Tricuspid atresia
Ebstein's anomaly

Congenital Heart Disease

In general, most operable congenital lesions of the heart are corrected before the patient reaches adulthood. Sometimes they present diagnostic problems, and probably one of the most common is the confusion between an ostium secundum atrial septal defect with rheumatic heart disease and mitral insufficiency in an adult.¹⁴ If an acyanotic lesion is encountered during adulthood, surgical intervention can be recommended¹⁵ (Table 6).

When a patient with a ventricular septal defect reaches adulthood, the intracardiac pressures are usually normal but they may have become so elevated that right-to-left shunting has already occurred and the patient is no longer a candidate for surgery.

The most frequent cyanotic problem encountered during adulthood is the tetralogy of Fallot, which can now be totally corrected by means of a cardiopulmonary bypass at a relatively low surgical risk.

Comparatively few cyanotic problems en-



Fig. 1. Bilateral selective renal arteriograms demonstrating atrophy on the right. Note the excellent definition of the secondary and tertiary arterial radicals offered by this technique.

countered during adulthood can be helped by palliative procedures such as anastomosis of the superior vena cava or systemic artery to the pulmonary artery. If marked polycythemia has occurred and pulmonary flow is inadequate such as in tricuspid atresia, anastomosis between the vena cava and the pulmonary circulation may improve pulmonary flow and the clinical status of the patient.

Often patients suspected of having congenital heart lesions are referred not so much for consideration of surgery but rather for confirmation of the diagnosis, so that an intelligent estimation of life expectancy and functional capacity of the patient can be offered. The operative risk in acyanotic forms of heart disease is still quite low, being generally less than 5 per cent. This does not differ significantly from the operative risk in adulthood.¹⁵

Rheumatic Heart Disease

In recent years the advent of mitral, aortic, and tricuspid valve prosthesis has caused a revolution in the surgical treatment of rheumatic heart disease.¹¹ However, insertion of one or several of these prostheses still entails a considerable surgical risk. Complications may occur both during and after operation, and the long-term effects on life expectancy are still in doubt. Endocarditis, congestive heart failure, valve detachment, and embolization are adversely affecting the long-term survival.

In general, if a patient is found to have pure mitral stenosis without significant calcification in the mitral valve and does not have a history of embolization, a closed mitral valvulotomy is advised at a risk of less than 3 per cent.

A closed mitral commissurotomy is advocated frequently in late class II functional cardiac disease* with pure mitral stenosis, whereas we tend to delay recommending valve replacement until the case has advanced to class III or greater because of the higher operative risk and incidence of complications.

A problem still being encountered fre-

quently is the failure to detect the mitral stenosis murmur because of its localization and occultness. Not infrequently patients are referred to medical centers with a diagnosis of cerebrovascular accident, sudden arterial occlusion, or a pulmonary condition producing hemoptysis when actually they have either had embolization or hemoptysis secondary to pulmonary hypertension caused by underlying mitral stenosis—their basic problem. It is wise to keep in mind the many unusual manifestations of rheumatic heart disease, particularly mitral stenosis; its early detection and correction can prevent premature death or irreparable disability.

Summary

Some of the more common cardiovascular problems encountered in adult patients have been discussed with reference to recent developments in diagnosis and surgical techniques. It is hoped that this presentation will serve as a stimulus for the introduction of many of the described procedures in community hospitals, and will clarify some of the more specialized procedures currently available in many medical centers.

References

1. (a) Vineberg, A. M.: Results of 14 Years' Experience in Surgical Treatment of Human Coronary Artery Insufficiency. *Canad. Med. Ass. J.* 92: 325-332 (Feb.) 1965. (b) Vineberg, A. M., and Walker, James: The Surgical Treatment of Coronary Artery Heart Disease by Internal Mammary Artery Implantation. *Dis. Chest.* 45: 190-206 (Feb.) 1964. (c) Vineberg, A. M.: Revascularization of the Entire Heart by Internal Mammary Artery Implantation, Epicardiectomy, and Free Omental Graft Operation. (p), *Circulation.* 32: 11-21 (March) 1965.
2. (a) Effler, D. B., Sones, F. M., Jr., Groves, L. K., and Suarez, E.: Myocardial Revascularization by Vineberg's Internal Mammary Artery Implant. Evaluation of Postoperative Results. *J Thorac Cardiovasc Surg* 50: 527-533 (Oct.) 1965. (b) Effler, D. B.: Vineberg's Operation for Myocardial Ischemia, *Postgrad Med* 37: 303-309 (March) 1965.
3. Sewell, W. H.: Results of 110 Mammary Pedicle Operations for Angina Pectoris, *Circulation* 32: 11-19 (March) 1965.
4. Gorlin, R., and Taylor, W. J.: Selective Revascularization of the Myocardium by Internal-Mammary-Artery Implant, *New Eng J Med* 275: 283-290 (Aug) 1966.
5. Medical News: Revascularization of the Heart, *JAMA* 195: 29-33 (Feb) 1966.
6. Longmire, W. P., Cannon, J. A., and Kattus, A. A.: The Surgical Treatment of Angina Pectoris, *Arch Intern Med* 104: 886-892 (Dec) 1959.
7. Effler, D. B., Groves, L. K., Sones, F. M., Jr., and

*New York Heart Association classification.

- Shirey, E. K.: Endarterectomy in the Treatment of Coronary Artery Disease, *J Thorac Cardio Surg* 47: 98-108 (Jan) 1964.
8. Hallen, A., Bjork, L., and Bjork, V. O.: Coronary Thromboendarectomy, *J Thorac Cardio Surg* 45: 216-223 (Feb) 1963.
9. Chardack, W. M., Gage, A. A., Schimert, G., Thomson, N. B., Sanford, C. E., and Greatbatch, W.: Two Years' Clinical Experience with the Implantable Pacemaker for Complete Heart Block, *Dis Chest* 43: 225-239 (March) 1963.
10. Cosby, R. S., Lau, F., Rhode, R., Cafferky, E., and Mayo, M.: Complete Heart Block: Prognostic Value of Electrocardiographic Features and Clinical Complications, *Amer J Cardiol* 17: 190-193 (Feb) 1966.
11. Samet, P., Jacobs, W., and Bernstein, V. H.: Electrode Catheter Pacemaker in the Treatment of Complete Heart Block in the Presence of Acute Myocardial Infarction: Report of Four Cases, *Amer J Cardiol* 11: 379-383 (March) 1963.
12. Paulk, E. Alan and Hurst, J. Willis: Clinical Problems of Cardioversion, *Amer Heart J* 70: 248-274 (Aug) 1965.
13. Conn, J. W., Rovner, D. R., and Cohen, E. L.: Normal and Altered Function of the Renin-Angiotensin-Aldosterone System in Man, *Ann Intern Med* 63: 266-284 (Aug) 1965.
14. Kuzman, William J. and Yuskis, Anton S.: Atrial Septal Defects in the Older Patient Simulating Acquired Valvular Heart Disease, *Amer J Cardiol* 15: 303-309 (March) 1965.
15. Mark, Herbert, and Young, Dennison: Congenital Heart Disease in the Adult, *Amer J Cardiol* 15: 293-302 (March) 1965.
16. Cooley, Denton A., Hallman, Grady L., and Hammam, A. Sameh: Congenital Cardiovascular Anomalies in Adults: Results of Surgical Treatment in 167 Patients Over Age 35, *Amer J Cardiol* 17: 303-309 (March) 1966.
17. Lewis, R. P., Herr, R. H., Starr, A., Griswold, H. E.: Aortic Valve Replacement with the Starr-Edwards Ball-Valve Prothesis, *Amer Heart J* 71: 549-563 (April) 1966.

North Carolina's Radiation Protection Program

WILLIAM L. WILSON, M.D.

RALEIGH

Why should a progress report on the North Carolina Radiation Program be of interest to the radiologists of the state, singly and collectively? In considering this question, I arrived at the following answers:

1. Other physicians need technical assistance and professional guidance regarding radiation that radiologists should be prepared to give.

2. Radiologists, and perhaps a few specialized pathologists, should know better than anyone else the biologic effects of radiation and the dangers of excessive dosage in human beings.

3. Radiologists have a legitimate interest in the advancement of their specialty and should feel free to appraise all the factors affecting the recruitment of new physicians and other personnel to the field.

The recent report of the National Advisory Committee on Radiation to the Surgeon General high-lights existing deficiencies, and the more serious future deficiencies in training and personnel required even to maintain

present standards of diagnosis, therapy, and research. In addition, radiologists are immediately concerned with Medicare requirements, specifically those affecting independent laboratories and hospital radiology departments.

As you know, the State Board of Health has statutory responsibilities for setting standards of health protection and safety in the use of radiation; for adopting regulations, subject to approval by the Governor, and enforcing compliance with them; for maintaining environmental and occupational surveillance over radiation and radioactivity; for handling emergencies; for evaluating the effectiveness of the program; and for continuing to inform the public concerning the program.

The North Carolina Regulations for Protection Against Radiation have been in effect since August 1, 1964. In accordance with these regulations, what has the limited State Board of Health staff been doing during the two years just ended?

Environment Surveillance

More than 1,000 samples of air have been collected at 18 sampling stations (Fig. 1) and the trapped particulate matter analyzed for gross beta iodine 131 and barium 140.

Read before the North Carolina Chapter, American College of Radiology, Southern Pines, October 15, 1966.

Chief, Occupational Health and Radiation Protection Section, North Carolina State Board of Health, and Director, State Radiation Protection Program.

Requests for reprints to North Carolina State Board of Health, P. O. Box 2091, Raleigh, N. C. 27602.

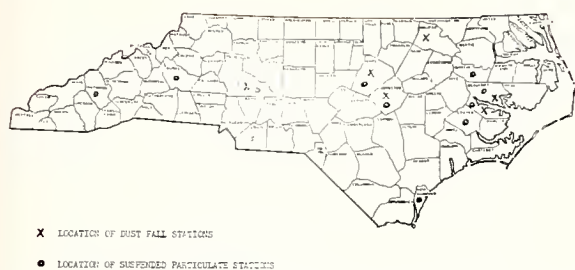


Fig. 1. Air sampling stations. X's indicate dust fall stations; dots, suspended particulate stations.

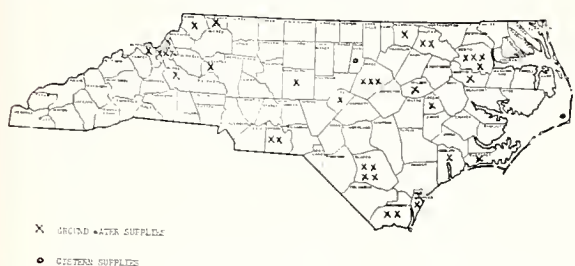


Fig. 2. X's indicate ground water supplies; dots, cistern supplies.



Fig. 3. Surface water stations.



Fig. 4. Rainfall stations.



Fig. 5. Milk sampling stations.

More than 600 samples of water have been collected at 154 stations including ground water (Fig. 2), surface water (Fig. 3), and rainfall (Fig. 4), and analyzed for gross beta particles. Some 13 periodic samples of milk have been collected at six stations (Fig. 5), gamma-scanned for iodine 131, cesium 137 and barium 140, and analyzed for strontium 89 and 90. Thus have we studied background radiation.

Some 300 additional atmospheric particulate and rainfall samples were collected during daily periods, to test and evaluate the effects in North Carolina of the 1965 and 1966 Chinese nuclear tests. This project alone would make an intriguing story.

Occupational Surveillance

In occupational surveillance, our attention has been concentrated on two related but quite different fields of radiation—x-ray machines and radioactive materials. The volume of past, current, and future work in meeting this responsibility is reflected in the following data, excluding some 700 x-ray machines in hospitals, which are not subject to State Board of Health programs or the North Carolina Regulations for Protection Against Radiation. Subject to the regulations, however, are close to 3000 x-ray machines, of which some 1300 are dental, perhaps 1400 medical, and 100 industrial. Few of these machines are owned, controlled, or operated by individuals with expert knowledge of radiation. Thus it is obvious why the State Board of Health wants radiologists to examine our activities and to become our allies and co-educators in service to those who control these machines.

We know exactly how many licensees are dealing with radioactive materials in the state. At the same time we continue to be concerned about the number, especially of those possessing or controlling radium, who are still unlicensed. A total of 240 licensees holding 281 North Carolina licenses are distributed as follows:

1. Human or medical uses	98
a. Radium alone—21	
b. Radium and other materials—77	
2. Civil Defense (cobalt 60 source) training sets	73
3. Industrial uses	43
4. Others	26

Table 1
State Radiation Protection Program¹
Registrants' Inspections²

Registrants	No. Inspected	No. Not Complying ¹	Percent
Physicians	186	150	81
Dentists ³	3	0	0
Veterinarians	38	7	18
Chiropractors	131	46	35
Industrial	8	1	12
Other	43	19	44
TOTAL	409	223	54

1. Effective August 1, 1964, under G.S. 104C, applying standards published in North Carolina Regulations For Protection Against Radiation.
2. List covers only inspections where units had been registered in compliance with North Carolina Regulations; certain unregistered equipment has been inspected also, but is not included here.
3. Most dentists of the state have participated in the Sur-Pak survey and were furnished corrective means indicated (filters and collimators).
4. No valid conclusion can be drawn from this table concerning the health significance of any noncompliance figures listed.

Now let us see why it is desirable, from a professional viewpoint, for radiologists to know what we are doing about the x-ray machines and radioactive materials. The answer lies in the results of our inspection of machines used by others during the past two years. Of 409 total registrants whose facilities were inspected, 223 or 54% failed to comply with one or more of the regulations. (Table 1). The types of 456 radiation machines involved, of which 273 (60%) failed to comply, are shown in Table 2. The most common points of noncompliance are shown in Table 3.

Noncompliance is even more prevalent with reference to the possession or control of radioactive materials, particularly radium. To possess such material, particularly radium, without a state license is in itself serious noncompliance.

During the past two years, of 92 licenses inspected 76 (82%) failed to comply with one or more regulations (Tables 4 and 5). As is true of the machine inspections, many items of noncompliance did not appreciably threaten public health—for example, administrative deficiencies. The significant point is that if a licensee or registrant is lax in one particular, even though it does not

Table 2
Noncompliance with Regulations by X-ray Registrants

Types of Machines Inspected*	No. Inspected	No. Not Complying	Percent
Radiographic (I)	306	169	55
Fluorographic (II)	60	53	88
Therapeutic (III)	42	28	67
Combination	40	23	57
Industrial	8	0	0
TOTAL	456	273	60

*Roman numerals apply to same items in Table 3; standards applied are published in current North Carolina Regulations For Protection Against Radiation.

Table 3
Items of Noncompliance in Order of Frequency
I. Radiographic (x-ray) machines

(306 inspected—169 in non-compliance)

- A. Excessive beam size
- B. Inadequate filtration
- C. Operator unable to view patient while exposing to x-ray
- D. No protective barrier for operator
- E. Other

II. Fluoroscopic machines

(60 inspected—53 in noncompliance)

- A. Inadequate filtration
- B. Beam larger than viewing screen 14 inches from the panel
- C. No timing device
- D. Excessive panel top dose rate
- E. Other

III. Therapeutic machines

(42 inspected—28 in noncompliance)

- A. No interlock on treatment room door(s)

*Standards applied are North Carolina Regulations For Protection Against Radiation.

Table 4
Noncompliance with Regulations in Use of Radioactive Materials

Number of inspections	92
Radium	28
Other materials	64
Number not complying	76
Percent of total	82

directly endanger public health, one wonders about more significant negligence or misuse in the future. One cannot determine the significance of the most frequent items of noncompliance merely by noting their relative position on the table. Only direct observation, competent measurement, and scientific evaluation can do that.

Licensees or registrants are routinely informed of the specific items on which they failed to comply with the Regulations, but the State Board of Health does not stop there.

Table 5

Most Frequent Violations* in Use of Radioactive Materials

	No.
Failure to post caution signs and labels	25
Failure to post "Notice to Employees" sign	21
No record of radiation surveys or isotopes disposal	20
No record of leak tests	19
Unauthorized user of radioactive material	17
Failure to do required leak test	16
Possession of radioactive material without a license	15
Failure to maintain inventory of sources	13
Failure to provide personnel monitoring	13
Failure to maintain records of receipt and transfer of radioactive materials	7
Level of radiation excessive in unrestricted area	5
Violation of specific license condition	5

*No valid conclusions can be drawn from these data concerning the relative significance to public health of the items listed.

We provide a directory of sources, federal and state as well as individual, to whom they may apply for leak-test services, equipment and instrument-servicing, and calibrations, consultations, and surveys which will enable them to comply with the regulations in full.

State Radiological Emergency Team

The State Radiological Emergency Team, which has been functioning since 1961, has been called into service on four occasions, in which no personal injuries were involved. Nine members of the North Carolina Chapter of the American College of Radiology, strategically located throughout the state, have voluntarily remained available for consultation at any hour, should treatment of any victim of a radiation accident be required. More than 1000 copies of the Team's Handbook have been distributed in other states and 14 foreign countries, and its detailed procedures have been applied in many places.

The radioisotope-counting and analysis laboratories and the instrument and equipment, calibration, testing and repair facilities of the Board have become functional, with unexcelled equipment valued at more than a quarter of a million dollars. To date 15 Board staff members have attended 52 prescheduled training courses in order to

keep current with their varied responsibilities.

Prospects

All of us will add to our knowledge as we proceed, mutually developing and implementing a reasonable but effective radiation protection program. Regarding x-ray, there is little doubt that some desirable changes will be made in Part E of the North Carolina Regulations for Protection Against Radiation. The National Council on Radiation Protection and Measurements has been working on a revision of NBS Handbook 76 (which basically corresponds to our Part E Regulations), and early publication is expected.

Too little is known of the extent and the nature of human diagnostic and therapeutic uses of radium and other radioactive materials. A research project to be undertaken by the Stanford Research Institute under Public Health Service contract promises to be of immeasurable help when its results are published.

Recently I accepted an invitation from the Public Health Service to serve as one of six members of its Radiation Health Training Grants Committee. To help alleviate some of the deficiencies in personnel and training mentioned earlier, this committee will advise on allotments of grants to train some 1200 radiation health specialists and 4000 radiation protection technicians by 1967.

Conclusion

How has our program been received? Contrary to the opposition that might have been expected in response to a new government regulatory program, we have received all but unanimous cooperation, appreciation, and commendation. We of the State Board of Health want to keep it that way, but we can do so only by keeping you informed, earning your interest and respect, and seeking your advice, cooperation, and active participation in our program. Together we can increase our knowledge of radiation, of its biologic effects, and of the most effective methods of control.

A Neurology Program in a Psychiatric Hospital

GEORGE W. PAULSON, M.D., AND S. T. GUPTON, JR., M.D.* 

RALEIGH

There has been an increase in interest in the neurologic problems and neurologic services of large public psychiatric hospitals.¹ Among the reasons for this renewal of interest is the fact that 50% of all hospital beds are in mental hospitals, and 30% to 50% of these beds are occupied by patients with organic brain disease. It is generally agreed that most state mental hospitals and centers for retarded children are inadequately staffed and are particularly short of neurologists.

This paper reviews some of the observations of two neurologists who spent the past two years on the staff of one public mental hospital, and emphasizes some of the difficulties in incorporating neurologists into such hospitals. It is our opinion that despite such difficulties, a neurologic service in a mental hospital can be extremely fruitful, and is indicated for the optimal care of patients with organic disease.

Clinical Setting

North Carolina, with more than 5 million people, has more than 40 public mental health clinics which are supported by four regionally located centers for the retarded and four hospitals for the mentally ill. The total inpatient resident population is about 15,000 patients, reasonably divided between all eight hospitals and centers. There are marked differences in the medical traditions, adequacy of staff, and depth of ancillary services of the institutions, but these differences are due to regional and historical factors rather than to any major disparity in overall state goals or allotment of state funds.

In July, 1963, the University of North Carolina School of Medicine established a medical-neurologic unit in one of the large hospitals (2300 patients), and for the past

two years two neurologists have participated in that program. Consultation and teaching visits have been made to the medical wards or infirmary, staffed by medical students and residents. The neurologists have also participated in a referral clinic and have made irregular clinic visits to three of the other hospitals and centers. Most of the referrals in the clinics have been made by resident or staff psychiatrists, some by students, and a few through nurses.

Patient Material and Services

Tables 1 and 2 summarize the consultations of the past two years. Each number represents a single patient. No patient is recorded in more than one category and follow-up visits are not listed. Teaching services included weekly teaching conferences in neurology, twice weekly neurology ward rounds, and neuropathology and neuroradiology conferences once a month. The patients used for conferences were often in addition to those listed in Tables 1 and 2. The clinic referral pattern accounts for the apparent scarcity of problems such as phenothiazine and diphenylhydantoin intoxication, conditions which were often seen but rarely required a formal consultation note.

The high percentage of unequivocal organic disease is apparent, and even in the

Table 1
Major Categories of Disease Encountered in
Consultations at Dix Hospital

Infection	16
Vascular	76
Tumor	20
Developmental	41
Degenerative	109
Toxins	47
Metabolic diseases	15
Demyelinating diseases	7
Convulsive disorders	189
Functional disorders	26
Psychiatric disorders	23
Trauma	56
Unknown, undiagnosed, and no diagnosis	62

Total

687

*From Dorothea Dix Hospital, Raleigh, North Carolina.

Request for reprints to Ohio State Medical School, Columbus, Ohio 43210 (Dr. Paulson).

Table 2

Neurologic Consultations in State Mental Hospitals

A. Total Patients Seen in Three Mental Hospitals and Centers in Consultation	
Infection	21
Vascular lesion	18
Tumor	7
Developmental defects	147
Degenerative diseases	47
Diseases due to toxins, drugs, and poisons	12
Metabolic diseases	7
Convulsive disorders	72
Functional disorders	6
Psychiatric disorders	11
Trauma	26
No neurological findings	7
B. 1965 Neuropathology Cases (in addition to prior patients recorded)	
Infection	5
Vascular lesion	21
Tumor	7
Developmental defects	3
Degenerative diseases	10
Diseases due to toxins, drugs, and poisons	1
Trauma	1
No neurological findings	2
C. Research Cases (usually in addition to all of above)	
Schizophrenic review	56
Infantile spastic hemiplegia	26
Tuberous sclerosis	36
Cutis verticis gyrata	21
Retrolental fibroplasia	58
Macular degeneration	14
Deaf children	30
Senile study (RNA)	21
Dementia	35

"unknown or no disease" category some definite neurologic problems were suspected. This particular category included criminal cases, bizarre toxic states, and complex psychiatric problems such as the differentiation between catatonia and akinetic mutism.

Eight hundred twelve electroencephalograms were made, 45% of which were abnormal. One hundred sixty-five arteriograms and 54 pneumoencephalograms have been made in the past two years. There are more than 1000 deaths yearly in the entire hospital system, and approximately 125 autopsies annually in our particular hospital.

Problems Created by the Program

A. For the hospital

The mental hospital that undertakes to organize a neurologic program will uncover unexpected administrative problems. Admin-

istrative changes in the mental hospital usually are budgeted ahead, often by several years, and are dependent on a state legislature which neither the hospital superintendent nor the neurologist can influence. If the neurologic program is successful, direct medical and surgical expenses will increase and the major diagnostic triumphs will increase immediate expenses. An aggressive neurologist will soon force the hospital to become aware of inadequacies in the x-ray department, neuropathology, physical therapy, EEG service, etc. In our own state, the process of detecting and treating a brain tumor at several of the institutions severely stretched a limited budget which included no coverage of neurosurgery.

In addition to cost factors, the staff of public mental hospitals is often wary of academicians whose eagerness to do research may increase the work load of personnel who foresee no personal benefits from the added effort. Many staff physicians are quick to suspect a patronizing attitude in the articulate academician who has had no personal experience in the problems of a large mental hospital. We have also noted that some of the recent progress toward community clinics and dynamic psychotherapy has siphoned away funds and staff from the care of purely organic illnesses.

B. For the medical school

The university which attempts to set up a medical or neurologic unit within the mental hospitals will also face certain problems. Included in these is the reluctance of faculty members of any medical school to commute, particularly if intermittent service or teaching is the only purpose of the visit. Administrative inertia in the mental hospital may be even greater than that of the university center. The administrative protocol will be different and more hierarchic, and trained hospital administrators are uncommon in most public mental hospitals. The major single problem for the university program in a mental hospital is the difficulty of attracting skilled young physicians to an unfamiliar and less prestigious setting.

Another difficult problem relates to the overwhelming service needs of the mental

hospital. Public mental hospitals range from nursing homes to city "charity" hospitals, from general practice to analytic psychotherapy. Patients with physical illnesses often have complex problems and are usually difficult to examine. Patients requiring neurologic consultation may be hard to ferret out of a large group of senile or epileptic patients.

C. For the neurologist

The neurologist on the mental hospital staff will himself be involved in all the difficulties cited above, plus several others. The libraries of mental hospitals may be charming psychiatric collections, but are not useful to the neurologist. Consultation with neurologic colleagues will be infrequent and prestige and salary will not be high. Major administrative decisions will not involve the neurologist, unless he deliberately involves himself in such administration.

None of these problems is peculiar to the neurologist in a mental hospital, and obviously the hospitals are not identical. Two features, however, are common to almost all such hospitals: (1) An extremely high percentage of the patients will be markedly brain-damaged and noncommunicative; (2) the long-range future of any large public mental hospital, especially regarding the calibre of staffing of ancillary services, is problematical.

Advantages

The psychiatric residency program in a psychiatric hospital will be benefited by the addition of a neurologist. In addition, better seizure control in the epileptic colony, additional support in rehabilitation, and additional EEG and neuropathologic coverage can often be arranged by the neurologist. In the face of the modern emphasis on community and analytic psychiatry, the neurologist can be a useful proponent of the importance of the physical substance of the brain.

The university medical center that becomes involved in a mental hospital will immediately acquire a large source of public patients, many of whom suffer from severe organic disease. Students and first-year resi-

dents find the problems challenging, and many of our students have actually had more direct patient contact and medical responsibility while at work in the mental hospital than during any other phase of their medical training. The academic neurology department can use the hospital to augment its particular training program, as in diagnostic procedures, seizure problems, EEG laboratories, long-range clinical research, etc.

The individual neurologist is likely, in most public mental hospitals, to find himself free to shape the job to suit his own interests. Certain areas of research, such as the anti-convulsant drugs, familial and degenerative disease, or mixed psychiatric and neurologic problems, are better studied in a mental institution than in any other setting.

How Can Affiliation Be Augmented?

Funds for joint medical school-mental hospital neurology programs will be necessary in order to increase the number of neurologists in mental hospitals. Such funds should originate from either state or federal sources, since the medical schools are not likely to initiate the programs. The state mental institutions and centers for the retarded will need to centralize the major neurologic diseases—first in clinics, and later in special neurology wards or hospital buildings. A regular consultation service should be established, and later more extensive services should be sought. An institutional commitment to adequate x-ray, EEG, neurosurgery consultations, and neuropathology is essential to the total neurologic program.

Space is usually readily available in the public institutions, but patient populations will often need to be rearranged. The newer federal programs, such as regionalization of the hospitals and expanded mental health clinics, need not deter the development of neurologic services in the mental hospitals, although they may divert funds into other channels for several years ahead. Neurologists must become involved in long-range planning efforts to meet the needs of the public hospitals, or else the needs will be neither seen nor met.

Psychological Evaluation in Pediatric Practice

DONALD J. STEDMAN, PH.D.

DURHAM

From the psychologist's point of view, good development in children means appropriate progress in social learning and intellectual ability as compared with the majority of children. This means that *language development, social maturity, independence, motor skills, emotional stability* and *motivational levels* are the prime areas of emphasis in his developmental evaluation.

In preschool children there are a few reliable measures of these variables, but a great deal of our diagnostic and evaluational power comes from systematic observations, descriptions of behavior by the mother, and interactions with the child in play situations. Ideally, these data come from longitudinal evaluations; several looks at the child at different life stages; something that the pediatrician does in the course of his medical practice.

I am concerned that the majority of our special developmental evaluations are one-shot affairs with a rather consistent note on the report of "Return in one year."

Preschool development is rapid and extremely variable; to make predictions on the basis of one examination is dangerous. Only a series provides good predictability of later developmental levels.

Because there are few reliable measures, it does not necessarily follow that our ability to estimate developmental levels is limited and unreliable. However, the approach must be different from psychological evaluation at later ages and we must settle for less structure, shorter evaluations, oftentimes heresay evidence and what many would consider "soft data."

Because behavior is variable and there are few reliable measures of behavior at

this age-level and because prediction is risky at this age, the pediatrician often avoids questions on readiness and retardation by citing the low power of evaluational tools available and invoking the "he'll grow out of it" hypothesis when questionable development progress confronts him.

It appears to me that the pediatrician is most often plagued by two kinds of questions: "Is the child retarded (or defective)? Is he ready for school?" The question about retardation is usually asked when the child is three years old; the question about readiness, when the child is five.

When the pediatrician is faced with a questionable developmental lag, he has two choices. He may say that the child is not retarded and prove to be right, or he may say that the child is retarded and prove to be wrong. Many pediatricians choose the former option because they want to and because the odds are better that they will be right. But what about these decisions, and how can more information be added to the process whereby they are reached? How can we increase the probability beyond the level of chance that our predictions about later levels of development will be valid?

In the past few years development psychologists, pediatricians, child psychiatrists and preschool educators have contributed heavily to our assessment power at the preschool level. Pediatricians in practice should become familiar with this work, not only to become aware of new options for referral to psychologists and psychiatrists, but because most of these techniques can be performed by the pediatrician himself in the course of his everyday work.

Screening Techniques

Intelligence

The *Bayley Scales of Infant Mental and Motor Development*¹ provide the first good series of well standardized developmental items, useful from the third day of life to the thirty-sixth month. Since both mental

Read before the Section on Pediatrics, Medical Society of the State of North Carolina, 1966 Meeting, Asheville, North Carolina.

From the Department of Psychiatry, Duke University Medical Center, Durham.

Request for reprints to 2010 Campus Drive, Durham, N. C. 27706.

and motor schedules are available, a double-barreled approach to infant development is provided. The scale is easily learned by persons already trained in development and provides a good method of tracing growth and development in pediatric practice. The instrument should be administered in at least three series over the first 24 months to gain good predictive power.

The *Peabody Picture Vocabulary Test*² is a highly motivating, pleasant, nonverbal test of verbal intelligence in children; it is easily administered, highly reliable, and closely correlated with more extensive individual tests of intelligence such as the Wechsler Scale. This is a low cost, short test that should be part of the appraisal tools of every pediatrician. The norms cover ages 2 to 16, and are most useful between 3 and 9 years.

The *Vineland Social Maturity Scale*³ is an old scale, recently revamped, that allows good comparative estimates of a child's rate of development in self-help skills, communication, large motor skills, and social behavior. It can be skillfully woven into a short interview with the mother and requires little interaction, if any, with the child. It is a useful signal of retardation or social lag in preschool-aged children.

Variables in Child Evaluation

These are samples of standardized sequential measures of development, and are preferable to the multipurpose screening manuals often attractive to office practice. However, the pediatrician should not discount the power of observation in reaching a viewpoint on developmental progress. In employing such techniques, it is important to keep in mind three variables:

1. The familiarity of the pediatrician with the child and his family and of the child with the pediatrician in his office setting.
2. The age of the child being observed.
3. The reason for observing the child in the first place.

Knowing a child's previous behavior and watching for shifts in that behavior or growth curve is a great help. Observing a child within the context of his family's style

of child-rearing is of even greater value. Indulgent or dependent mothers may raise inhibited or docile children who may appear to be slow. Highly motivated and ambitious families may yield children, especially boys, who are hyperactive and overly aggressive, and who may appear to be disturbed or precocious. A playroom may help reduce fears that often accompany the child to the doctor, who in the child's view may be a person to avoid either because of an immunization series, a previous illness, or the mother's use of the doctor as a disciplinary threat.

The child's age is perhaps the most relevant variable. Age-appropriate behavior may be misleading at times, and even with years of experience in dealing with children we must be careful to weigh social and health factors in our estimate of whether the behavior observed is appropriate for the age of the child we see. The concept of mental age has some utility in the preschool years, but we have come to realize that there are also great differences related to sex, stature, birth order, and social class which must affect our judgment of the appropriateness of a child's behavior to chronological age.

Finally we must guard against bias. Our judgment of a golf partner's child may be poorer than of a stranger's. A retarded older sister or brother may rightly or wrongly affect our judgment regarding the child under study. Our reticence to make a diagnosis of developmental arrest when the data are unclear may lead us to offer "humane" but unjustified advice to parents who are apprehensive about their child.

Predicting school readiness is not simply a matter of measured or inferred intelligence in the child. The more important issues are (1) the child's trust in adults and in himself; (2) *independence* and adequate self-control in groups; (3) sufficient *language skills* to relate to other children and to make his needs and desires known; and (4) adequate *identification* of self, not only in terms of sex role, but in terms of his own limits and respect for the rights and reasonable controls of others, especially adults. Most children have accomplished these tasks by the age of five or six. Some have not, and are

therefore not ready for school. Others are ready at three or four, and should be allowed to expand their abilities in a preschool or nursery program.

The pediatrician wants to remain, and should remain, a medical specialist for children. However, he is also the major source of advice on their behavioral development and must therefore, whether he likes it or not, engage in developmental evaluation to meet the needs of his young patients and their families. Consequently, it would seem important to become more proficient in developmental appraisal, using tools provided by adjacent disciplines such as those I have mentioned. Such proficiency increases rather than weakens the quality of pediatric practice, and provides a substantially greater service to the children in the community.

The major objection raised by pediatricians when learning and using structured or semi-structured assessment techniques is limited time. This is not a valid objection for two reasons: (1) If time is required to make a good diagnosis, it must be taken, and (2) none of the techniques suggested takes more than 15 or 20 minutes when the instruments have been mastered. When the utility of these techniques has been demonstrated in a few clinical cases, they will be forever a part of the pediatrician's routine practice. Beyond these advantages, the pediatrician who becomes familiar with the techniques can make better sense out of consultative information from the psychologist, and better interpret and apply psychological findings to the case in question. This will also serve to strengthen the skills of the psychologist, who must learn the language and read the concerns of the pediatrician in order to help him effectively.

A Call for Involvement

This is a call for involvement by pediatricians in learning and applying some of the skills usually preserved for the psychologist and psychiatrist. There is nothing "holy" about *who* uses the techniques, only about *how* they are used. It seems to me that these suggestions are not only appropriate but crucial to the everyday practice and concerns of

the pediatrician, and that to ignore them is to fly in the face of the reality that a significant number of the problems presented to the pediatrician are developmental and behavioral in nature.

There are certainly going to be times when referral for more thorough behavioral diagnosis will be made. How much more complete and valuable that referral can be, and how much more profitable for the family, if it can be accompanied by screening data and a more systematic behavioral history than is usually the case.

We in North Carolina are being greatly aided by the establishment of Developmental Evaluation Clinics by the State Board of Health, but the increasing availability of special diagnostic resources should not be a deterrent to increased diagnostic sophistication on the part of the referring pediatricians. In the next decade, the concept of the community mental health center will expand rapidly in North Carolina. However, these centers can be successful only if the pediatrician can integrate mental health findings into his practice and interpret them to the family. He will need to share and take part in the diagnostic and treatment procedures in order to serve the needs of his patients and provide effective support for their families. To "let George do it" would be a mistake and perhaps a disservice to those he holds in his care.

In my view, this is preventive mental health in action. With the pediatrician as a full partner in the evaluation and treatment of developmental problems, it is incumbent upon him to acquire and to use those techniques necessary to assure his own active and productive participation.

References

1. Bayley, N.: Bayley Scales of Infant Mental and Motor Development, Psychological Corporation, New York City, 1966.
2. Doll, E.: The Vineland Social Maturity Scale, American Guidance Service, Minneapolis, 1964.
3. Dunn, L.: The Peabody Picture Vocabulary Test, American Guidance Service, Minneapolis, 1963.
4. Stott, L., and Ball, R. S.: Infant and Preschool Mental Tests: Review and Evaluation, Soc Res Child Development, vol 30, No. 3, 1965.

Gallstone Obstruction of the Colon

HUBERT M. POTEAT, JR., M.D.

SMITHFIELD

Gallstone obstruction of the intestine is a relatively rare entity occurring in perhaps 2 to 3 percent of all cases of intestinal obstruction. The site of obstruction is usually in the lower 24 inches of the ileum. Gallstone obstruction of the large bowel is even more rare, because it would seem likely that any stone passing the ileocecal valve would readily traverse the large bowel. If, however, the fistula is between the gallbladder and the colon, the presence of a stone in the large bowel is explained. A case presenting not one but two obstructions of the large bowel is reported.

Case Report

A 58-year-old woman came to the Emergency Room of Johnston Memorial Hospital on September 11, 1965, complaining of generalized abdominal pain, inability to move her bowels, nausea (but not vomiting), and abdominal distention. These symptoms had begun insidiously 48 hours before admission and had become progressively worse. She had given herself several enemas with no results other than the elimination of a little flatus; there had been no stool. She had taken several cathartics without any result other than increased cramping, abdominal pain, and some distention. She had been seen by her family physician, a competent internist, who made the clinical diagnosis of acute diverticulitis and referred her to the hospital.

Past history

Her past medical history is interesting but served only to confuse the picture. In 1950 she underwent supracervical hysterectomy for fibroids. I saw her for the first time in 1963 because of an intraepithelial carcinoma of the cervical stump. This tumor was resected and there has been no evidence of re-

currence. About six months before the present admission she had seen her physician because of epigastric discomfort, nausea, and intolerance of fried food. He suggested diagnostic evaluation, which she declined. He prescribed a weight-reducing, low-fat diet, and her symptoms abated and she had no further trouble until the present admission.

Clinical findings

Physical examination disclosed an obese woman who looked her stated age of 58, and was quite apprehensive and obviously in some distress. The salient features of the examination were a softly distended abdomen, generalized tenderness, most marked in the left lower quadrant, hyperactive bowel sounds, no palpable mass, and an empty anus. An abdominal x-ray series revealed a considerable amount of air in the large bowel and scattered pockets of air in the small intestine.

The patient was admitted to the hospital and given an enema, which produced a little flatus but no stool. She was then placed under sedation. The abdominal distention was more marked, bowel sounds continued to be hyperactive and a barium enema examination revealed ready filling of the colon. The radiologist thought he saw a narrow segment in the distal sigmoid on fluoroscopic examination, but this was quickly hidden by barium passing into the proximal colon. A postevacuation film revealed the rectum and anus to be emptied but the proximal colon remained filled. The preoperative diagnosis was intestinal obstruction of the sigmoid, probably due to a polypoid tumor acting as a ball valve.

Operation and postoperative course

At laparotomy, which was done via a left rectus incision, enormous distention of the proximal bowel and some distention of the lower ileum were encountered. The obstructing lesion was identified as a gallstone measuring 4 1/2 cm. in greatest diameter. The

stone was oval on one side and flat on the other—obviously one of a pair of “sister stones.” It was removed and the sigmoidotomy incision closed in two layers after the proximal bowel had been aspirated. The biliary fossa could not be visualized; however, in that area the second or “sister stone” could be palpated in a mass that was thought to be a cholecysto-transverse-colonic fistula. The patient’s postoperative course was stormy, owing to a massive wound infection and partial evisceration.

Ten days after the operation the patient had recovered sufficiently to allow a cholangiogram and another barium enema examination to be made. The cholangiogram revealed a common bile duct of normal calibre, and a complete absence of dye in the gallbladder. The barium enema examination revealed a cholecysto-transverse-colonic fistula (which had been overlooked in the original examination), and the “sister stone” was identified in the gallbladder.

The wound was still granulated when the patient was discharged on her 30th hospital day, and she was observed on an ambulatory basis for the next two months, at which time the wound was healed but she had an enormous incisional hernia. It was decided to defer repair of the hernia and removal of the remaining stone for the time being, and I was in a quandary as to how I could combine the two procedures into one. Obviously the feat was next to impossible.

Second admission

One of the problems was resolved on February 8, 1966, when the patient again came to the emergency room complaining of cramping abdominal pain and inability to move her bowels. About 36 hours prior to admission she had begun to have pain in the

upper quadrant of the abdomen, followed by abdominal distention, and again obtained no relief from enemas or laxatives. On inserting her finger into the anus, she had felt the stone but was unable to pass it.

The presence of a large rectocele and the patient’s extreme apprehension made it necessary to administer an anesthetic in order to deliver the “sister” stone through the anus. Recovery was uncomplicated and she left the hospital the following day. Aside from the incisional hernia, she has been well since. On a recent barium enema examination the fistula was barely visible and no barium had entered the gallbladder.

Comment

1. Wound infection such as this patient demonstrated is the most common complication of colotomy for acute obstruction. The reason is immediately apparent since there is no opportunity for adequate preoperative preparation.

2. The question necessarily arises as to the disposition of the gallbladder. Certainly, the occasion of the original operation for the relief of obstruction was no time to consider a surgical attack on the cholecystocolonic fistula. The patient’s desperate illness demanded the simplest operative procedure to relieve the obstruction. If the second stone had not spontaneously passed, a cholecystectomy and closure of the fistula would have been required. Since the stone did pass and a subsequent x-ray examination showed the fistula to be closing, it is my opinion that the gallbladder is no longer a part of the biliary system (as evidenced by failure of the dye to enter the gallbladder) but is, in fact, a symptomless diverticulum of the transverse colon and, as such, requires no treatment.

No people in the world eat such quantities of animal food as the English, which is one reason they are so generally tainted with the scurvy and its numerous train of consequences, indigestion, low spirits, hypochondriacism, etc.—William Buchan: *Domestic Medicine*, or a Treatise on the Prevention and Cure of Diseases by Reginmen and Simple Medicine, etc. Philadelphia, Richard Folwell, 1799, p. 62.

North Carolina Medical Journal

Owned and published by
The Medical Society of the State of North Carolina,
under the direction of its Editorial Board.

Wingate Memory Johnson, M.D.
Founding Editor (1940-1963)

EDITORIAL BOARD

Robert W. Prichard, M.D., Winston-Salem
EDITOR

John S. Rhodes, M.D., Raleigh
ASSOCIATE EDITOR

Miss Louise MacMillan, Winston-Salem
ASSISTANT EDITOR

Mr. James T. Barnes, Raleigh
BUSINESS MANAGER

W. McN. Nicholson, M.D., Durham
CHAIRMAN

Ernest W. Furgurson, M.D., Plymouth

John C. Reece, M.D., Morganton

Robert A. Ross, M.D., Chapel Hill

Charles W. Styron, M.D., Raleigh

Address manuscripts and communications regarding
editorial matter to the

NORTH CAROLINA MEDICAL JOURNAL

300 South Hawthorne Road, Winston-Salem, N. C. 27103

Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 203 Capital Club Building, Raleigh, N. C. 27602. All advertisements are accepted subject to the approval of a screening committee of the State Journal Advertising Bureau, 510 North Dearborn Street, Chicago, Illinois 60610, and-or by a Committee of the Editorial Board of the North Carolina Medical Journal in respect to strictly local advertising accepted for appearance in the North Carolina Medical Journal.

Instructions to authors appear in the January and July issues.

Annual Subscription, \$5.00

Single copies, \$1.00

Publication office, Progress Printing Co., Inc., Box 175, Fuquay-Varina, North Carolina 27526.

FEBRUARY, 1967

THE MIDWINTER EXECUTIVE COUNCIL MEETING

Unlike the post-blizzard conditions of 1966, the 1967 Midwinter Executive Council Meeting was held on a sunshiny Pinehurst day, though the weather did no good for the dawn-to-dusk indoor activities of the councilors, commissioners, and others who attended. President Jones steered the group through a 47-item agenda in a business-like way.

After 82 years, it seems that the Medical Society of the State of North Carolina will

get a headquarters building. The Council authorized the purchase of an acre of land at the corner of Lane and Person Streets in Raleigh, across the way from the Governor's mansion. The property will allow the construction of an adequate building with adequate parking space, and will be within walking distance of state government offices. The price was less than half that which has been paid recently for land in the neighborhood. Further developments will be brought to the May meeting of the Society.

Dr. Beddingfield's legislative report was, as usual, crammed with facts and forecasts. By the time this editorial is in print Senate hearings on the Hart bill (Senate bill S-260) will have brought North Carolina into the news, in all likelihood. The Hart bill aims at prohibiting physicians from dispensing drugs or appliances, even though it might be done for the convenience of the patient and without profit. In North Carolina there seems to be no sentiment at this time to bring the state under Title 19 of Social Security, often called Medicaid. The legislature will probably wait until 1969, taking note of the experience of other states and the proposed congressional actions aimed at modifying this title. Legislation will probably be introduced to clarify the procedures under which a person may grant authority for the removal of parts of his body after death. The chiropractors will likely introduce legislation quite different from that which they sponsored in 1965. At that time they aimed to broaden the scope of the act regulating chiropractic; this time internal rearrangement within the scope of their current activities is sought. The State Board of Education may be given funds to assist three-year diploma schools of nursing; the Board would supervise curricula.

The Appalachia program got considerable discussion; those interested (and all North Carolinians should be) are referred to President Jones's message in the January issue of JOURNAL.

Various committees which deal with the relations between the state's physicians and third parties involved in medical care stay busy all the time, and reported on their work.

The agreement on medical care of military dependents has been satisfactorily renegotiated, the principle of "usual and customary" fees obtaining. The same arrangement will be in force with the expanded program for retired military personnel and their dependents, as authorized by the 89th Congress. It is anticipated that 95%-98% of the patients will have their bills paid under this system without need for adjustment. Negotiations continue with the Industrial Commission, so far without successful result.

Changes in the By-Laws mentioned in the report of the Fall Executive Council Meeting will be presented to the delegates in May. The proposed changes would lead to staggering the terms of Councilors and Vice-Councilors to provide smooth transition, and limiting Councilors to two successive terms. Procedures for the nomination, election, and interim appointment of delegates and alternate delegates to the AMA would be clarified in the proposed changes. Finally, the election of members of the State Board of Medical Examiners and JOURNAL editorial board would be moved from the final General Session to the House of Delegates, with nominations to come from the Nominating Committee (or from the floor). Nominations for the Board of Medical Examiners would be announced in advance of the meeting by the Nominating Committee. Delegate action on some changes will require delayed implementation pending ratifying action by the 1968 House of Delegates.

The Society's poll of Executive Council sentiment regarding the proposed elimination of the exemption of physicians from jury duty finds the unanimous opinion that exemption should continue, for the obvious public service. The opinions have been forwarded to the legislative committee considering court reform.

The Council endorsed the nomination of Dr. Amos Johnson for the AMA Board of Trustees. It was noted that said Board of Trustees had appointed five North Carolina physicians and two of our states' clergymen to positions of national importance in the AMA committee structure.

Sitting in for one councilor was his alter-

nate, the sitting being done next to the editor. Near the day's end this physician remarked that he wished all physicians could watch the work of the Society being done. It is impressive to note the great amount of responsibility the Society has in representing North Carolina medicine locally, statewide, and nationally; it is equally impressive to note how much of it is taken for granted by physicians who have never borne a hand with the duties.

* * *

THE OFFICERS CONFERENCE

The annual conference of County Medical Society officers and committee chairmen, sponsored by the Committee on Public Relations, was held at the end of January in the Carolina Hotel's plush new assembly hall at Pinehurst. In addition to detailed orientation by Medical Society leaders, time was given to discussion of AMA relationships and impending legislative action affecting health affairs on both the national and state fronts.

A highlight of the conference was the luncheon address of Mrs. Marilyn Benson of the Program Services Department of the AMA. Her refusal to allow two feet of snow in Chicago to cancel the mission to Pinehurst attests to her resourcefulness. Mrs. Benson's address entitled "Another Round on the Medical Square" was a discourse on the metamorphosis of the word "square," a term once connoting honesty, dedication, and genuine and sterling qualities of character, which has too often in contemporary parlance come to mean peculiar, queer, awkward or not "hep." Her plea, with nostalgic empathy, was for the survival and revival of the ethical and moral principles indelibly inscribed in medical history. Such rapt attention as this address commanded has seldom been seen in a medical audience.

A panel of medical, hospital, and news media representatives considered medicine's current public image. Although a recently reported poll placed physicians second among vocations and professions in public esteem, it was agreed that while the individual physician enjoys the respect and

adulation of his patients, the organized profession has a much less favorable posture. It was concluded that the essence of public relations is doing good and making the facts known to the public, with cognizance of the fine line dividing horn-blowing from commercialism.

Dr. Frank Jones, Medical Society President, concluded the conference with an erudite and succinct summation of the program content, with emphasis on its implications and guidelines for county society officers.

J.S.R.

* * *

THE RIGORS OF HOSPITAL LIFE

One has to be in reasonably good condition to be a hospital patient. If a person in his usual state of health were to be enticed into a hospital bed, it would strain his resources to cope with what happens. Awakened early in the morning to have his temperature taken amidst the clanging of gear in the hall, he would face an uncertain period of waiting before being served strange food in an uncomfortable position. This over, he will usually have to compete with others for the use of bathroom facilities, attended by delay, frustration, and embarrassment. Having gotten as clean as possible under the circumstances, a shower not usually being available (we are talking, remember, about a good physical specimen), he returns to bed or bedside chair to await the next step, usually unknown in nature, but mildly terrifying at least.

The day being launched, the patient is sent off ill-clothed to other parts of the hospital, where he is received in the dark recesses of x-ray departments and laboratories. Then back again to more strange food. Visiting hours come, and between his own visitors and those of his fellow patient or patients in the room, a strenuous afternoon of social intercourse is gotten out of the way.

Once or more in the course of these events the pseudo-patient is visited by a physician who takes a history and does a physical examination. In some places he may have two

or more physical examinations, with attendant deep breathing, bending over, rectal examinations, and other indignities. Evening comes, another meal arrives about the time he would ordinarily be leaving work, and he settles down to a second round of visitors.

About 9 P.M. the hospital version of quiet begins to descend. He may doze, but this is doubtful as preparations are made to stow the patients for the night. Laxatives and enemas for tomorrow's GI series are given, sleeping pills are brought out, and hypodermics are given with attendant protests. As sleep of a sort arrives near midnight, someone falls out of bed and sleep is over. All through the night something is happening. Patients are awakened to take their sleeping pills. The night nurses are discussing their salaries and getting madder as they do. The hours are good ones for rearranging shelves and cleaning bedpans left behind in the daytime rush. Some private duty nurses compare notes on their sleeping patients. If our man does sleep for a few hours, the 5 A.M. temperature check will keep him from developing bad habits.

After several days of this—personal dignity in shreds, stomach growling, eyes sunken from lack of sleep, back aching from a strange bed, energy sapped by examinations and uncertainties—our healthy specimen would be ready for some medical attention. But he had best get out of the hospital!

Overdrawn as the above sketch may be, there is sufficient truth in it to remind physicians and others concerned with hospitals that the institution must not become an end in itself. Like the horrendous bureaucratic superstructures of Kafka's works, the patient is in danger of being lost in the tangle of separate disciplines which engulf him in the hospital. With increasing pressure for maximum utilization, there is increasing danger that the patient will come to be looked on as a commodity to be processed with the greatest efficiency, rather than as a sick human being who wants to be taken care of—efficiently, yes, but also with due regard to his dignity as an individual.

Committees & Organizations

COMMITTEE ON APPALACHIA

The Committee on Appalachia met in Pinehurst on January 27, 1967, Dr. David G. Welton, chairman, presiding.

This committee was established by the State Medical Society on its own initiative not by request of the federal government. Its purpose is to learn essential facts about the Appalachian program and to discuss its implications for the private practice of medicine in North Carolina, especially the 29 counties which lie in the geographical area of Appalachia.*

A Core Committee consisting of four members of the Appalachia Committee, four district councilors, and a chairman was nominated and elected.**

The Statement of Policy of the Council of the Ohio State Medical Association regarding the Proposed Southeast Ohio Appalachia Health Care Complex was examined minutely, word for word, and after much discussion the Committee developed a Statement on Policy for submission to the Executive Council of the Medical Society of the State of North Carolina. The Statement, together with the full report of the Committee on Appalachia, was approved by the Executive Council, in session in Pinehurst, on January 29, 1967. (Members are also referred to President Jones's January, 1967, Message on this subject.—*Ed.*)

STATEMENT OF POLICY APPROVED BY THE COMMITTEE ON APPALACHIA, January 27, 1967

In order to assure the patients of quality medical care, any medical care program should be developed

*The 29 North Carolina counties included in this region are: Ashe, Alleghany, Avery, Alexander, Burke, Buncombe, Caldwell, Cherokee, Clay, Davie, Forsyth, Graham, Haywood, Henderson, Jackson, Madison, Macon, McDowell, Mitchell, Polk, Rutherford, Stokes, Surry, Swain, Transylvania, Watauga, Wilkes, Yadkin, Yancey.

**Core Committee elected by the Committee on Appalachia: Drs. David G. Welton, chairman, Charlotte; James E. Oliver (Jackson), Sylva; F. J. Ragaz (McDowell), Marion; Emmett R. White (Burke), Valdesse; Claude A. McNeill, Jr. (Surry-Yadkin), Elikin; Charles L. Stuckey (Councilor, Seventh District), Charlotte; Louis deS. Shafner (Councilor, Eighth District), Winston-Salem; James S. Raper (Councilor, Tenth District), Asheville; T. Lynch Murphy (Councilor, Ninth District), Salisbury.

and implemented in accordance with the following principles:

1. The program should in no way restrict, impinge on, or interfere with, the physician-patient relationship.
2. The program should be physician-directed and medically oriented.
3. The diagnostic and treatment factors are to be determined and directed by the patient's attending physicians.
4. The patient's need for medical services is to be determined by the patient's physician.

5. The medical service content must serve as the core of the health care program and all other health care services must be constructed around this core.

In addition to these indispensable principles, the Committee on Appalachia is seriously concerned about the interpretation of the Guideline in Section 1, Resolution 62, of the Appalachia Regional Commission which would deliver comprehensive services to all segments of the population regardless of economic status of the individual receiving the services. The Committee believes that this Guideline is not realistic in the sense that such a guideline would destroy the present concept of the private practice of medicine.

The stated intent to provide comprehensive health care to the entire population is not within the intent of Congress as expressed in Section 2, PL 89-4. The intent expressed in this Law is . . . "to assist the region in meeting its special problems." The provision of comprehensive health services to those persons who have the ability, or third party resources, to provide their own health care is not meeting a "Special problem."

The Committee on Appalachia recommends:

1. That the Medical Services programs contemplated should be planned, activated and supervised by practicing physicians endowed with policy-making authority.
2. That the physicians in each county medical society in the Appalachia region be urged to assume leadership in the planning and implementation of these programs.
3. That the Medical Society of the State of North Carolina shall serve in an advisory and coordinating capacity in the development and implementation of these regional programs.
4. That in the provision of medical care under any circumstances, the program must conform to the principles of medical ethics and to the Statutes of the State of North Carolina.

Warner-Chilcott Names Edward A. Palmer Eastern Region Sales Manager

Promotion of Mr. Edward A. Palmer to Manager of the Eastern Region for Warner-Chilcott Instruments has been announced by Mrs. E. O. Brown, Manager of Marketing.

Mr. Palmer will be responsible for sales in the entire eastern United States to the Mississippi River. He will also supervise the eastern distributor sales network maintained by Warner-Chilcott.

Bulletin Board

Coming Meetings

North Carolina Mental Health Association, Annual Meeting—Hotel Sir Walter, Raleigh, March 9-10.

National Conference on Rural Health—White House Inn (formerly Queen Charlotte Hotel), Charlotte, March 10-11.

Duke Pediatric Seminar—Duke University Medical Center, Durham, March 14-16.

North Carolina Health Fair—National Guard Armory, Goldsboro, March 16-18.

Greensboro Academy of Medicine, 20th Annual Symposium—Greensboro, March 30.

Postgraduate Course in Obstetrics and Gynecology, sponsored by the Maternal and Child Health Section of the North Carolina State Board of Health—Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, April 11-13.

Annual Spring Congress in Ophthalmology and Otolaryngology—Gill Memorial Eye, Ear, Nose and Throat Hospital, Roanoke, Virginia, April 3-7.

North Carolina Tuberculosis Association, 1967 Annual Meeting—Blockade Runner, Wrightsville Beach, April 20-21.

Medical Society of the State of North Carolina, 113th Annual Session—Pinehurst, May 20-24.

Tri-State Medical Association, Annual Meeting—Nags Head, June 12-14.

Mountain Top Medical Assembly—Waynesville, June 15-17.

Sixth Annual Southwide Lawyers and Physicians Congress—Lake Junaluska, August 9-13.

NEW MEMBERS OF THE STATE

Dr. Alfred Smith, R, Forsyth Memorial Hospital, Winston-Salem.

Dr. Charles Robert Moore, Grover Clinic, P. O. Box 45, Grover.

Dr. Robert Lorenza Green, R, 710 Quarterstaff Road, Winston-Salem.

Dr. Luther George Bell, Ind. Medical Director Spring Mills, Inc., Crandall Plant, Wagram.

Dr. Gerald Lee Points II, 5215 Wrightsville Avenue, Wilmington.

Dr. William Ferguson Hamilton, Jr., R, Gloucester.

Dr. Edward Stephen Platt, Oph, Box 1956, Hendersonville.

Dr. Winfrey E. Whicker, P. O. Box 598, 504 S. Franklin Street, China Grove.

Dr. Jack Kennedy Wilson, Gp, 1309 S. Kerr Avenue, Wilmington.

Dr. Richard Arnold Mangum, Gp, 107 W. Main, Plymouth.

Dr. Walter Michel Roufail, Professional Building, Winston-Salem.

Dr. Wilbur Pullen Matthews, Pd, 1339 Hawthorne Road, Wilmington.

Dr. John Adam Young, II, Oph, 1600 E. 3rd Street, Charlotte.

NEWS NOTES FROM THE BOWMAN GRAY SCHOOL OF MEDICINE OF WAKE FOREST COLLEGE

The Walter C. Teagle Chair in Neurology has been established at the Bowman Gray School of Medicine through a \$600,000 gift from the Teagle Foundation, Inc., of New York City.

Dr. James F. Toole, chairman of the Department of Neurology, was selected to fill the endowed professorship which is named for the late Walter Clark Teagle, former president and chairman of the board of Standard Oil Company (New Jersey).

Based on the school's recent contributions in neurology and the neurological sciences and its potential for future development in this field of medicine, the Bowman Gray School of Medicine was selected as recipient of the first and only endowed professorship contemplated by the foundation.

Dr. Toole is chiefly responsible for the school's accomplishments in neurology. Upon assuming the chairmanship of the department four years ago, he reorganized the department, initiated a strong research program and remodeled the school's postdoctoral training program in neurology.

Trained both in internal medicine and neurology, Dr. Toole, who holds the B.A. degree from Princeton University and the M.D. degree from Cornell University Medical College, is nationally known for his work on cerebral vascular disease. He is presently writing a book on cerebrovascular disorders which is scheduled for publication in the spring.

He recently developed and serves as director of Bowman Gray's cerebral vascular research unit, through which studies are concentrated on the prevention, causes, and treatment of diseases of the blood vessels serving the nervous system. He also devised a new program of special training for practicing physicians in the diagnosis and treatment of cerebral vascular diseases. These are the initial projects in a long-range plan to develop the medical school and North Carolina Baptist Hospital as a major stroke center.

* * *

The Bowman Gray School of Medicine recently received a \$125,000 grant from the Irene Heinz Given and John La Porte Given Foundation, Inc., of New York City to support the medical center's \$28-million expansion program.

The funds will be used to purchase equipment for the expansion of the Department of Radiology's programs of teaching, research, and patient care.

Construction is scheduled to begin in May on the first phase of the medical center's building program.

* * *

A new research technique, developed at the Bowman Gray School of Medicine, could help to determine the cause of atherosclerosis.

Dr. Hugh B. Lofland Jr., associate professor of pathology, has developed a perfusion technique for keeping arteries alive after they have been removed from

experimental animals. The method enables researchers to study metabolism in the arteries.

Dr. Lofland heads a three-man research team which is attempting to determine the role of the arteries in the development and progression of atherosclerosis. Their work represents a new approach to the study of atherosclerosis. Previous research on the disease has dealt principally with the materials flowing through the arteries rather than with the vessels themselves.

The Bowman Gray team was recently awarded a grant of more than \$200,000 by the National Institutes of Health to support the continuation of their work over the next five years. Their project, originated eight years ago as a nutrition study, has received previous support from the American Heart Association as well as from federal grants.

* * *

Dr. Frank C. Greiss, Jr., assistant professor of obstetrics and gynecology, served as Visiting Professor of Obstetrics and Gynecology at Baltimore City Hospitals, Baltimore, Md., Dec. 7-8. He spoke on "Physiological Control of Blood Flow during Pregnancy and its Clinical Implications" and "Physiological Evaluation of Blood Loss."

* * *

Dr. Harold D. Green, professor and chairman of the Department of Physiology, was recently elected to a two-year term on the executive committee of the American Heart Association's Council on Basic Science.

* * *

Dr. A. Robert Cordell, associate professor of surgery, presented a paper on "Experience with Carotid Body Tumors—A Challenging Entity" at a meeting of the Southern Surgical Association Dec. 5-8 in Boca Raton, Fla.

* * *

Six members of the Bowman Gray faculty participated in a regional meeting of the American College of Physicians Dec. 9 in Charlotte. Dr. James F. Toole, professor and chairman of the Department of Neurology, moderated a panel discussion on "Cerebral Vascular Disease." Papers were presented by: Dr. A. Robert Cordell, associate professor of surgery; Dr. Richard Janeway, instructor in neurology; Dr. Laurence B. Leinbach, associate professor of radiology; Dr. Henry S. Miller, Jr., assistant professor of medicine; and Dr. Robert W. Prichard, professor of pathology.

NEWS NOTES FROM THE DUKE UNIVERSITY MEDICAL CENTER

Dr. Thomas D. Kinney, professor and chairman of the Department of Pathology at Duke University Medical Center, has been appointed editor of the American Journal of Pathology. The journal is the official monthly publication of the American Association of Pathologists and Bacteriologists.

He succeeds Dr. Edward A. Gall of Cincinnati, the journal's editor for the last nine years.

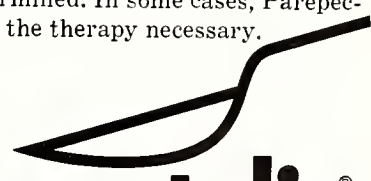
Dr. Kinney is the author of some 100 scientific papers and was editor from 1952 until 1966 of Laboratory Investigation, the official publication of the International Academy of Pathology.



He leaves to make an urgent call But doesn't use the phone at all

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin, and protects
intestinal mucosa.

Whether it's a 24-hour "bug", a food problem, or simply nervousness and anxiety, Parepectolin will bring the diarrhea under control until etiology can be determined. In some cases, Parepectolin may be all the therapy necessary.



Parepectolin®

Each fluid ounce of creamy white suspension contains:
Paregoric (equivalent).....(1.0 dram) 3.7 ml.
Contains opium ($\frac{1}{4}$ grain) 15 mg. per fluid
ounce.
warning: may be habit forming
Pectin (2½ grains) 162 mg.
Kaolin (specially purified).... (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Adult Dose: One or two tablespoonfuls three
times daily.



WILLIAM H. RORER, INC.
Fort Washington, Pa.

Last year, Dr. Kinney was president of the American Association of Pathologists and Bacteriologists and at the moment is involved in establishing a new organization of medical school pathology department chairmen. He is secretary-treasurer of the American Society for Experimental Pathology of the Intersociety Committee for Research Potential in Pathology and of Universities Associated for Research and Education in Pathology.

* * *

A new program to be launched at Duke University next September is expected to appeal to outstanding students interested in both history and medicine.

The program is designed to train medical historians to fill posts in universities throughout the country.

Aided by a \$221,132 grant from the Josiah Macy, Jr., Foundation, the medical historian curriculum will involve six years of graduate study leading to both doctor of medicine and doctor of philosophy degrees.

The money, payable to the university over a period of eight years, makes it possible to give traineeship awards, which include stipends and full tuition.

Co-directors will be Dr. E. Croft Long, assistant dean of student affairs at the School of Medicine, and Dr. Irving B. Holley, professor of history in the Graduate School of Arts and Sciences.

Two students will be taken into the program each year. Applicants must meet the requirements for admission to both the School of Medicine as candidates for the Ph.D. degree in the department of history. Several students have already shown an interest in the program.

Dr. Long said the program has been constructed to offer the student a "great latitude in the selection of his course material."

During the first year a full-time medical basic sciences program will be offered, followed the second year by clinical science. At the end of the second year the student will enter the graduate program.

* * *

Under the terms of a new grant, a close look will be taken at the legal ramifications of using physician's assistants now training under a unique program at Duke University Medical Center.

Because no such person as a physician's assistant exists at this time, the problem of legally defining the role looms large in the minds of those who might use him.

The new grant—\$90,000 spread over three years—has been made by the Josiah Macy Jr., Foundation. It will be directed specifically toward training the assistants and determining just where this new breed of medical care personnel will fit into the health picture.

The program to train physician assistants, hailed by many as an important step toward alleviating the critical health manpower shortage, was begun in 1965. Its first four students, all former military medical corpsmen, will graduate next September. Thirteen full-time students and eight part-time students are in the program. Some 500 applications have been received from others interested in taking the course.

The program is directed by Dr. E. A. Stead, Jr., chairman of the Department of Medicine; Dr. Andrew

TUCKER HOSPITAL, Inc.

212 West Franklin Street

RICHMOND, VIRGINIA

A private hospital for diagnosis and treatment of psychiatric and neurological disorders. Hospital and out-patient services.

JAMES ASA SHIELD, M.D.

WEIR M. TUCKER, M.D.

GEORGE S. FULTZ, JR., M.D.

EDWARD W. GAMBLE, III, M.D.

CATHERINE T. RAY, M.D.

GERALD W. ATKINSON, M.D.

Wallace, an assistant professor of medicine and director of the cardiac intensive care unit; James Mau, administrative assistant of the Department of Medicine, and Mrs. Katherine Andreoli, nursing instructor.

* * *

Addressing the annual meeting of the American Academy of Orthopaedic Surgeons held in San Francisco recently, Dr. Donald E. McCollum and three other doctors from Duke University Medical Center and Durham Veterans Administration Hospital reported that alcoholism may be a factor in the loss of blood circulation in the hip bone.

In a group of 65 patients with a diagnosis of aseptic necrosis of the femoral head, the Durham team found a significant history of alcoholism in 26.

Joined with Dr. McCollum in the study were Drs. Michael T. O'Neil, Robert S. Mathews, and Frank W. Clippinger.

Two grants totaling \$128,800 have been awarded to two pharmacologists at Duke University Medical Center by the National Science Foundation.

Dr. Eugene M. Renkin, a professor of pharmacology and head of the division, has been given \$73,800 for a two-year study on the transport of radioactive materials by blood circulation through the capillaries.

Assisting Dr. Renkin will be two post-doctoral research associates, Dr. David Garlick of Sydney, Australia, and Dr. Peter J. Bentley, a newly appointed associate professor of pharmacology, is for \$54,000.

NEWS NOTES FROM THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE

Two-Way Radio Conference Program

The two-way radio conference program, planned by the University of North Carolina School of Medicine in collaboration with Duke University Medical Center, the Bowman Gray School of Medicine, Albany Medical College, and the Ohio State University College of Medicine, is well under way.

The conferences are broadcast Tuesdays, 1-2 p.m., over the following radio stations in North Carolina:

WUNC-FM—CHAPEL HILL, 91.5 mc
WSJS-FM—WINSTON-SALEM, 104.1 mc
WGWR-FM—ASHEBORO, 92.3 mc
WVOT-FM—WILSON, 106.1 mc
WITN-FM—WASHINGTON, 93.3 mc
WFMA-FM—ROCKY MOUNT, 100.7 mc

The cooperation of these stations is gratefully acknowledged.

All physicians within the listening areas of these stations are invited to tune in. Those who cannot join an actively participating group can listen. Teaching materials that supplement these conferences will be mailed to those physicians who desire them. Address Two-Way Radio Conferences, U.N.C. School of Medicine, Box 27, N. C. Memorial Hospital, Chapel Hill, N. C.

The conference program for March and April is as follows:

- 7 March—Auscultation of the Heart. Ernest Craige, M.D., Department of Medicine.
- 14 March—Fever Not Requiring Antibiotic Therapy. Joseph S. Pagano, M.D., Departments of Medicine and Bacteriology.
- 21 March—The Influx of Worldwide Disease. Martin D. Keller, M.D. and Glen E. Gresham, M.D., Department of Preventive Medicine, The Ohio State University College of Medicine, Columbus, Ohio.
- 28 March—Congestive Heart Failure. Ellis L. Rolett, M.D., Department of Medicine.
- 4 April—Venereal Disease and the Practicing Physician. William L. Fleming, M.D., Department of Preventive Medicine and Ronald H. Levine, M.D., Chief, Communicable Disease Control Section, N. C. State Board of Health, Raleigh, N. C.
- 11 April—Diagnosis and Treatment of Venereal Diseases. William L. Fleming, M.D., Department of Preventive Medicine and J. Lamar Callaway, M.D., Division of Dermatology, Department of Medicine, Duke University Medical Center, Durham, N. C.

* * *

Research on a new class of compounds which could become pain-relievers without being habit forming will be carried out at the U.N.C. School of Medicine under a four-year grant totaling about \$250,000.

The National Institute of Neurological Diseases and Blindness has approved the grant to Dr. Louis S. Harris, associate professor of pharmacology at U.N.C. for a study of "narcotic-antagonist analgesics."

The compounds under study seem to provide the

Compliments of

Wachtel's, Inc.



Surgical Supplies



15 Victoria Road

P. O. Box 1716 Telephone AL 3-7616

ASHEVILLE, North Carolina

pain-relieving benefits of morphine without having morphine's addiction properties.

One of the compounds also has been used in the treatment of narcotic addiction.

* * *

Studies of a germ which causes respiratory infections in children and adults will be confined for another year at the U.N.C. School of Medicine.

The National Institute of Allergy and Infectious Diseases has renewed a grant of \$23,000 to Dr. Wallace A. Clyde, a specialist here in children's diseases, to study the part that "PPLO"—pleuropneumonia-like organisms—play in human respiratory diseases.

Dr. John T. Sessions, Jr., a specialist in internal medicine at the U.N.C. School of Medicine, has been appointed chairman of a national drug review panel.

He will preside over one of two teams of specialists which will be responsible for a study of the effectiveness of drugs used for the treatment of disorders of the stomach and intestinal tract.

* * *

The National Academy of Sciences-National Research Council has agreed to judge for the U. S. Food and Drug Administration the effectiveness of 3,000 to 4,000 drugs now on the market.

The huge task will be tackled by 165 of the leading physicians in the United States, appointed to 27 special

review panels. The work will begin under an initial 18 month, \$834,000 contract.

* * *

A leader in Soviet Russia's development of live-virus vaccines reported on successes against influenza, measles and mumps at the U.N.C. School of Medicine in December.

Speaking at a weekly medical staff conference, Prof. Anatol Smorodintsev described the results of laboratory research and field trials of Russia's newest live-virus vaccines. He is chief of the Virus Department, Institute of Experimental Medicine, Academy of Medical Sciences in Leningrad.

* * *

A Scientist-Speaks-to-the-Editor series of meetings will be conducted in eight cities of North Carolina beginning this year.

Science faculty from the University of North Carolina in Chapel Hill will speak in plain language, using non-technical terms, in talks to newspaper editors, TV, and radio broadcasters. Newsmen will ask questions and there will be informal discussion of current science topics.

The Ford Foundation is providing funds for the sessions, including dinners for the newsmen and their wives attending. The programs will be sponsored jointly by the Council for the Advancement of Science Writing, and the University of North Carolina in Chapel Hill.

* * *

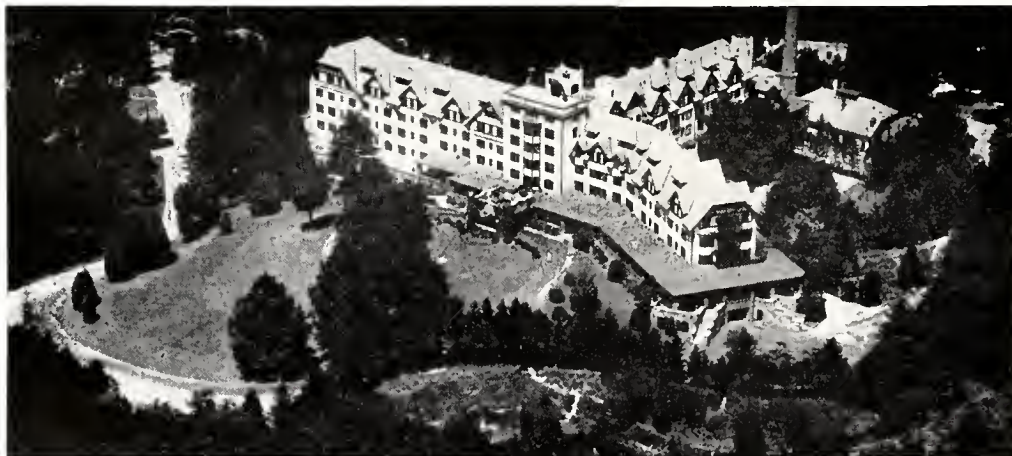
Some of the world's leading authorities on blood-

APPALACHIAN HALL

ESTABLISHED — 1916

ASHEVILLE

NORTH CAROLINA



An Institution for the diagnosis and treatment of Psychiatric and Neurological illnesses, rest, convalescence, drug and alcohol habitation.

Insulin, Coma, Electroshock and Psychotherapy are employed. The institution is equipped with complete laboratory facilities including electroencephalography and X-ray.

Appalachian Hall is located in Asheville, North Carolina, a resort town, which justly claims an all around climate for health and comfort. There are ample facilities for classification of patients, rooms single or en suite.

Wm. Ray Griffin, Jr., M.D.

Robert A. Griffin, M.D.

Mark A. Griffin, Sr., M.D.

Mark A. Griffin, Jr., M.D.

For rates and further information write

APPALACHIAN HALL, ASHEVILLE, N. C.

clotting attended a four-day meeting of the International Committee on Hemostasis and Thrombosis at U.N.C. in December.

The committee had held its annual meeting in the U. S. only once before. Members are prominent scientists in Europe, the Middle East, South America and the United States.

Dr. Kenneth M. Brinkhous, chairman of the Pathology Department at the U.N.C. School of Medicine, is chairman of the international committee.

Other officers are Dr. J. P. Soulier of Paris, France, honorary chairman; Dr. Paul Owren of Oslo, Norway, vice chairman, Dr. A. Loeliger of Leiden, Holland, secretary.

* * *

Alumni and development foundations aiding U.N.C. in Chapel Hill announced gifts of \$4,285,993.81 for scholarly and other activities. Donors included parents of students organized to help in certain schools.

Twenty development organizations, most of them formed to benefit schools or assist special academic programs in the University, met and designated allocation of funds raised.

* * *

The Medical Parents Club of the U.N.C. School of Medicine set as a 1966 goal the completion of a program to raise \$12,500 for the W. Reece Berryhill Scholarship.

The Scholarship fund, honoring Dr. W. Reece Berryhill, medical school dean emeritus, was about \$3,000 short of its goal in early December.

To date, 123 parents and friends of the medical school have contributed almost \$10,500 to the fund.

* * *

Research on the chemistry of heredity was explained by a U.N.C. biochemist at a meeting in New York City.

Dr. Edward Glassman spoke at a special symposium conducted by the New York Academy of Sciences. His topic was "The Genetic Control of Xanthine Dehydrogenase."

Dr. Glassman also lectured about his research at Yale University's Department of Molecular Biophysics and at Brandeis University's Department of Biology.

* * *

Psychological studies of emotional behavior are being undertaken at the U.N.C. psychiatric center with a new federal grant totalling about \$95,000.

Dr. Stuart Valins, psychologist and project director, said the studies will attempt to clarify the conditions and situations which lead individuals to experience such feelings as fear, anger, and elation.

Such information is valuable in developing treatment techniques capable of changing abnormal or inappropriate reactions to emotional situations.

* * *

Federal, state, and private agencies invested almost \$18.4 million in research and training activities at U.N.C. in Chapel Hill during the past fiscal year.

This was an increase of 38 per cent over the year before.

Two-thirds of the money was channeled into research



for psychiatric treatment

Peachtree Hospital, located in Atlanta, Georgia, is a complete psychiatric, alcoholic and drug addiction treatment facility accredited by the Joint Commission on Accreditation of Hospitals. The hospital has 65 beds, 47 of which are devoted to the care of psychiatric patients

and 18 of which, in a separate area, are for patients with acute cases of chronic alcoholism or drug addiction. Treatment procedures include psychotherapy, electroconvulsive shock therapy, subinsulin coma and chemotherapy. We will be pleased to provide further information upon request.

ACCREDITED BY THE JOINT COMMISSION ON ACCREDITATION OF HOSPITALS

peachtree hospital

41 PEACHTREE PLACE, N. E. / TELEPHONE 873-5681 / ATLANTA 9, GEORGIA

projects and the other one-third into training programs. Research funds increased by 48% training funds by 22%.

Dr. George R. Holcomb, dean of research administration here, emphasized that the \$18.4 million represents the money "awarded" to the University, not the money "spent or received."

The total does not include capital improvement grants (for construction), gifts and bequests, or funds awarded to individuals in the form of fellowships.

The grants and contracts represent 404 new or renewed projects and programs.

* * *

Dr. George R. Holcomb of U.N.C. in Chapel Hill was named president of the National Council of University Research Administrators at the annual business meeting in Washington, D. C.

He is dean of research administration and assistant professor of anatomy.

* * *

Dr. Donald M. Wood, psychologist in the Department of Psychiatry, has been appointed assistant director of the multi-million dollar Child Development Institute now being set up at U.N.C.

Dr. Wood will be the administrative coordinator for the two centers which will operate under the Institute—the medical school's Child Development Center and the Frank P. Graham Child Development Center.

NORTH CAROLINA HEART ASSOCIATION

Regardless of General Assembly action on revenue bonds to finance industrial development, North Carolina will pay a heavy tax in human lives for its business growth, the President of the North Carolina Heart Association warned recently.

Dr. A. Robert Cordell, associate professor of surgery at Bowman Gray School of Medicine, said that heart attack deaths among business executives and skilled laborers between 45 and 64 years old had jumped 30% during the state's ten years of greatest business growth.

"If we are to avoid seriously impairing our pool of management and skilled labor we must undertake a massive program of human salvage," he said.

State Board of Health figures indicate that last year 22,123 people died from all forms of heart disease, including heart attack, stroke, arteriosclerosis, and other cardiovascular disorders.

Significant reductions in the heart disease death rate among children, women and men in certain age categories have been made, Dr. Cordell said, "but the 1966 toll still means that 54% of all the people who died in the state last year were victims of heart disease."

The North Carolina Heart Association has a program in cooperation with physicians and pharmacists in the state to prevent secondary attacks of rheumatic fever.

Rx

...for a
healthy
CREDIT
POLICY

IF you are a physician, dentist, hospital administrator or clinic manager—

AND if you find yourself over-burdened with credit and collection problems—

THEN you're ready for a professional consultation. Whether you were trained to treat patients, run a hospital or manage a clinic, regular consultations with specialists in fields other than your own are probably a part of your routine.

If you haven't already done so, the professionally-trained specialist you should consult is your local Medical Credits representative. For his name and address, write:

Associated Credit Bureaus of N. C.

P. O. Box

300



Greensboro,

North Carolina

U. S. Health Expense Analyzed

The average American had an annual health expense of \$129 during 1962, data collected in the Department of HEW's Health Interview Survey shows, according to the National Association of Blue Shield Plans.

This expense increased directly with age, ranging from \$61 for children under 6, to \$208 for persons 65 and over.

Included as health expenditures were physician expense, hospital inpatient expense, medicine costs, dentist expense, and special or other medical expense such as eye glasses, speech therapy, wheel chairs, and emergency or out-patient treatment in a hospital or clinic.

Physician expense represented about one-third of the total health expenses in the population, and, regardless of sex and age, and was invariably greater than any of the other four categories of health expense. Total health expense increased with the educational level of the family head and with the level of family income.

NEWS NOTES

Dr. James H. Lipsey of Asheville was among 15 physicians who went to South Viet Nam in December to treat civilians under the AMA Volunteer Physicians for Viet Nam program.

The program is administered by the American Medical Association and financed by the United States Agency for International Development.

Volunteer physicians serve a 60-day tour of duty at one of 18 provincial civilian hospitals in South Viet Nam. Their services are entirely unpaid except for transportation costs and an expense allowance of \$10 a day.

* * *

Mrs. L. F. (Iola Reynolds) Norton, mother of Dr. J. W. R. Norton, the former State Health Director, died in the Scotland Memorial Hospital in Laurinburg on January 10. She was 93.

A native of South Carolina, Mrs. Norton was the mother of eight children, all of whom are living.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS

Scholarships for completion of training in physical and occupational therapy are available from the National Society for Crippled Children and Adults, it was announced recently.

Under this program, scholarships are awarded to seniors in a certificate course in physical or occupational therapy or to those completing their clinical affiliations. The basis of selection is academic excellence, financial need, and ability to utilize training.

The deadline for applications is May 1. For further information, those interested should write the Scholarship Coordinator, National Society for Crippled Children and Adults, 2023 W. Ogden Avenue, Chicago, Illinois 60612.

INDUSTRIAL MEDICAL ASSOCIATION

How to recognize and manage problem drinkers in industry and details of starting an industrial alcoholism program are covered in a 24-page booklet entitled "Alcoholism in Industry," just released by the Industrial Medical Association.

The booklet contains four articles and a panel discussion which have appeared in various issues of the *Journal of Occupational Medicine*, the Association's official publication.

Copies of the booklet are available at \$1.00 each from the Industrial Medical Association, 55 East Washington St., Chicago, Ill. 60602.

NATIONAL CONFERENCE ON RURAL HEALTH

The 20th National Conference on Rural Health will be held in Charlotte March 10-11 at the White House Inn (formerly the Queen Charlotte Hotel).

Four North Carolinians will be among the participants discussing community health planning, health careers education, emergency medical care and first aid, among other subjects set for the program. The four are John R. Kernodle, M.D., of Burlington, member, AMA Council of Medical Service and Chairman, Committee on Welfare Services; Robert N. Wilson, Ph.D., Department of Epidemiology, University of North Carolina, Chapel Hill; E. A. Resch, editor, *Chatham News*, Siler City; and W. Wyman Washburn, M.D., of Boiling Springs, past chairman, AMA Council on Rural Health.

Sponsored by the American Medical Association Council on Rural Health, the Conference will have as its theme "Rural-Urban Health Relationships."

Program information is available from the Medical Society of the State of North Carolina, P. O. Box 790, Raleigh, N. C., or from the Council on Rural Health, Department of Health Education, American Medical Association, 535 North Dearborn Street, Chicago, Ill. 60610.

SOUTHERN MEDICAL ASSOCIATION

The Section on Orthopedic and Traumatic Surgery of the Southern Medical Association has announced the election of the following officers to serve for the coming year: William J. Tobin, M.D., Washington, D.C., chairman; Hanes H. Brindley, M.D., Temple, Texas, vice-chairman; and F. Wayne Lee, M.D., Charlotte, N. C., secretary.

These officers will be responsible for arranging the program for the Section on Orthopedic and Traumatic Surgery for the 61st Annual Meeting of the Association, which will be held in Miami Beach, Florida, November 13-16, 1967. Anyone wishing to participate in the program should contact the Secretary of the Section, Dr. F. Wayne Lee, 225 Hawthorne Lane, Charlotte, N. C. 28204.

Dr. Lee was recently appointed to the Council of the Southern Medical Association.

The Month in Washington

At a cost of nearly \$1 billion, more than six million older persons got hospital and medical benefits during the first six months of the medicare program.

Social Security Commissioner Robert M. Ball expressed satisfaction with the overall operations so far of the health insurance program for the elderly. But Ball warned of bed shortages in the nation's capital, in various New England states, and in most rural areas when a new medicare benefit of nursing home care went into effect Jan. 1. He estimate that for 50,000 to 60,000 beds would be needed for extended care in nursing homes.

The Commissioner recommended a number of changes in the program, including the extension of medicare benefits, which apply to persons 65 or older, be extended to 1.3 million disabled persons.

Ball's report on the first six months of medicare included:

—About 2.5 million elderly persons received free hospital care and 3.5 million benefited from medical services.

—Since medicare began July 1, 1966, hospital occupancy increased 5%, as expected. Thirty per cent of all hospital beds were occupied by those 65 or older at the end of 1966.

—About 6,700 hospitals now are participating in medicare. About 250 hospitals were excluded because they did not meet minimum standards, and 75 hospitals because of racial discrimination.

—Payments to doctors and skilled medical personnel, such as radiologists, have taken too long.

—Overcrowding of hospitals in various "isolated" incidents.

—Almost all of 17.5 million persons who signed up for additional medical insurance at a premium of \$3 maintained their payments.

Sen. George D. Aiken (R., Vt.), proposed a nine-point program to liberalize benefits under the government's medicare plan for action by Congress. One would extend medicare drug coverage to prescriptions for old people whether or not associated with hospi-

tal confinement. A similar plan was included in a Senate-passed tax bill last summer but was killed in a Senate-House conference. Other Aiken proposals would eliminate deductible and co-insurance features, waiting periods, and enrollment deadlines from the medicare plan, lower the 65-year age requirement for women to 62, and permit payment of medical specialist fees customarily provided by hospitals.

* * *

The National Advisory Cancer Council reported that, although cancer is still on the increase, more people are being cured of it than ever before.

The report—titled "Progress against Cancer"—shows that 30 years ago there were 144,774 cancer deaths in the United States, a crude rate of 112.4 per 100,000 of the population. In 1967 an estimated 305,000 deaths will occur, bringing the rate up to 153 per 100,000, according to the report. On the other hand, there has been an improvement in the cure rate. In 1937, less than one in five cancer patients survived five years without evidence of disease, but currently about 35%, or better than one in three, are saved. There is good reason to believe, the report states, that this favorable trend will continue.

Intensive study of six types of cancer is recommended:

Cancer of the breast, which has shown little improvement in incidence or mortality for about 30 years; the lymphomas, one of which, Hodgkin's disease, has been cured in 40% of cases in a localized stage; chronic leukemia and multiple myeloma, for which drug treatment should be greatly improved; lung cancer, which continues to increase,

AN ETHICAL AND EFFECTIVE COLLECTION SERVICE SPECIFICALLY DEVELOPED FOR THE MEDICAL PROFESSION	<i>Professional Service Co.</i> 93 MASSACHUSETTS AVENUE BOSTON 15, MASSACHUSETTS
---	--

particularly in both men and women smokers; and uterine cancer, which has been significantly reduced and might be almost totally eradicated by early detection with the "Pap" smear.

* * *

Expenditures on prescription drug research and development reached a new high, but fewer new products actually reached the market in 1966 than during any single year on record.

C. Joseph Stetler, president of the Pharmaceutical Manufacturers Association, said that the situation was attributable to several factors, including difficulties encountered under federal drug regulations. He said that the 1962 federal drug amendments had necessitated increasingly lengthy, costly periods for manufacturers to develop technical information required by the government. Stetler added that more time also has been required by the Food and Drug Administration for processing applications.

Total research and development expenditures during 1966 were estimated by Stetler at about \$400 million. He said that only 11 basic new products had been marketed in the year, compared with 23 in 1965, 17 in 1964, 18 in 1963, 28 in 1962, and 41 in 1961. The peak year was 1959 when 63 new products were introduced.

A PMA survey shows that a principal focus of the million-dollar-a-day search by industry for new pharmaceuticals is on drugs acting on the central nervous system and sense organs. These include sedatives, stimulants, tranquilizers, and analgesics.

Medical and Surgical Motion Picture Catalogue Now Available

A new and revised edition of "Medical and Surgical Motion Pictures," the American Medical Association's catalogue of selected medical and health films, is now available.

More than 1,000 new film titles have been added in the new edition of the catalogue, bringing the total film listings to more than 4,000.

The catalogue is primarily directed to those concerned with the education of medical students, interns, residents, physicians in all specialties and participants in fields allied to medicine. All films listed are readily available in the United States, and have been found useful by recognized reviewing groups.

Copies are available without charge from the Medical Motion Picture Section, Department of Postgraduate Programs, American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610.

In Memoriam

James F. Donnelly, M.D.

Dr. James F. Donnelly, Director of the State Board of Health's Personal Health Division, died June 24, 1966, of a heart attack.

Dr. Donnelly, who had been with the State Board of Health for twelve years, also handled the job of administering the state's responsibilities under the federal Medicare program. He was named director of the Personal Health Division in March, 1961. In addition to serving as director, he was on the faculty at the University of North Carolina School of Medicine at Chapel Hill.

A native of Pennsylvania, Dr. Donnelly had lived in North Carolina for about 25 years. He received his medical degree from the University of Chicago. Before joining the State Board of Health he was a professor of obstetrics at the Bowman Gray Medical School in Winston-Salem.

Dr. Donnelly was author of a score of articles in medical journals over the years. He was a member of the American Medical Association, American College of Obstetricians and Gynecologists, American Committee on Maternal Welfare, American Public Health Association, South Atlantic Association of Obstetricians and Gynecologists, North Carolina Medical Society, North Carolina Obstetrical and Gynecological Society, North Carolina Public Health Association, Wake County Medical Society, and American Association of Obstetricians and Gynecologists.

He is survived by his wife, Mrs. Marjorie Donnelly, and his mother, Mrs. May Donnelly, both of the home; one daughter, Maurea Jean Donnelly; and one sister, Mrs. William Smith of Ft. Wayne, Ind.

George W. Johnson, M.D.

Whereas, God in his infinite mercy has seen fit to call one of our beloved friends and colleagues into eternal life, we pause to pay tribute to him.

When the mortal life of George Johnson terminated on October 12, 1966, an era in medicine also came to an end. More than any other physician of his day, Dr. Johnson personified all the fine attributes of a dedicated and compassionate physician. His reputation as a skilled gynecologist and obstetrician extended far beyond the borders of New Hanover County. There is hardly a community in Eastern North Carolina which has not known the warmth of his personality and benefited from his healing touch.

He served his community long and faithfully for more than 45 years, and many a life has been saved because of his unselfish devotion to duty. His capacity for work was prodigious. He literally accomplished the tasks of three ordinary physicians, and always in a cheerful

and indefatigable manner. Surely he must have been possessed of the Holy Spirit.

His good works will continue to show forth through the efforts of his skilled and equally dedicated son, Dr. George Johnson, Jr.

Therefore, be it

Resolved, That this memorial be spread on the minutes of the New Hanover County Medical Society and that a copy be sent to his family.

Charles P. Graham, M.D.

Traveler's Insurance Issues Highway Accident Booklet

More than 4,000,000 persons were killed or injured on U. S. Highways in 1965.

This grim message is contained in the Traveler's Insurance Companies annual highway accident booklet, which reports 48,500 deaths and 4,100,000 injuries last year. Statistics in the booklet were compiled from reports by state motor vehicle departments.

The trail of death and destruction in 1965 marked the first time the casualty count has exceeded the 4,000,000 level. Fatalities increased by 1% over 1964; injuries were up by 7%.

Young drivers—those under 25 years of age—again led the list of offenders. And their collective record in 1965 was substantially worse than in any previous year.

Although these younger persons represent only about 18% of all licensed drivers, they were involved in more than 30% of all fatal accidents and 28% of all non-fatal mishaps.

"Sooner or later," says a Travelers spokesman, the traffic toll will reach proportions where the nation will no longer tolerate such destruction on the highways."

The company in 1965 announced it would sponsor a massive research program designed to study man and his environment. The first phases of this program will deal with man and the automobile and will include research on the interaction of the driver, the car, and the environment.

Travelers already has invested \$250,000 in this study and expects to contribute thousands more as research continues.

Classified Advertisements

Pediatric practice available for follow up pediatrician mountain town-county fifty thousand population also drawing other areas. Three hospital town opening suitable two pediatricians with office available and take over arrangements. Marked urgency on this replacement. Write "Placement Service 14-25", P. O. Box 790, Raleigh, N. C. **TF**

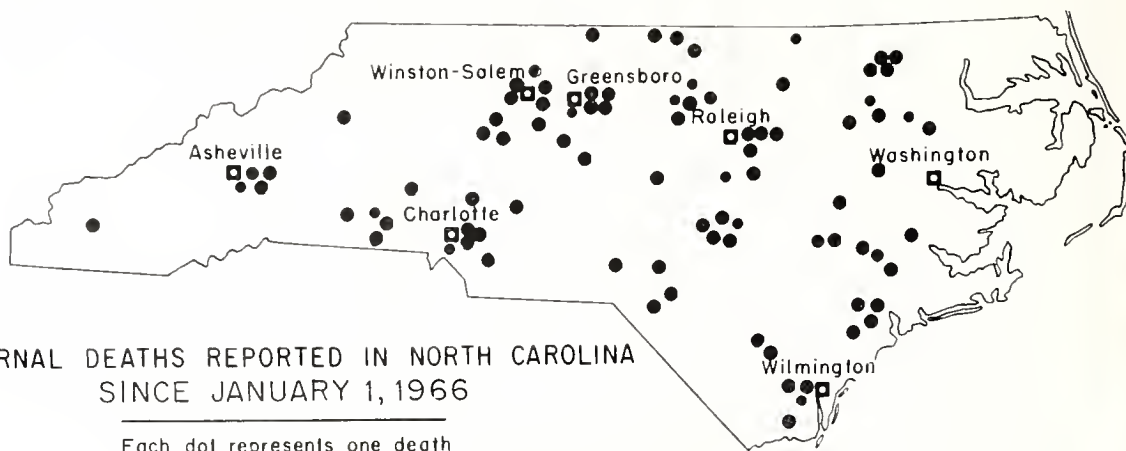
WANTED: Full time industrial physicians for permanent employment in DuPont Company plants. Excellent opportunity. General practitioner preferred. Salary open. Immediate opening at May Plant in Camden, S. C. Please write to: G. W. Hammon, Personnel Section, E. I. DuPont de Nemours & Co., Inc., Drawer "A," an equal opportunity employer. **JF**

Associate Medical Director, Full-Time, Interested in Preventive Medicine for Large Corporation in Winston-Salem, North Carolina. Generalist, Internal Medicine or Occupational Health Background Preferred. Desirable Age 30 to 45. Salary, Commensurate with Experience. Reply to Box 790, Raleigh, N. C. 27602.

"WANTED: Physicians to staff: Emergency Room at Wilmington, N. C., full-time regular hours, adequate time off, minimum guarantee. Rapidly expanding area with four industrial plants and new hospital due to open soon; ideal climate; varied recreational facilities; educational advantages include four-year college. For details contact: Dr. James Tidler, 2029 South 16th Street, Wilmington, N. C. 919/763-8184."

FMAMJ

Wanted: Pediatrician for Burlington, N. C. Three other pediatricians will assist and provide coverage. This is an excellent opportunity in an ideal location. May write Dr. Paul F. Maness, 328 W. Davie St., Burlington, N. C., or call 228-8341.



MATERNAL DEATHS REPORTED IN NORTH CAROLINA SINCE JANUARY 1, 1966

Each dot represents one death

NORTH CAROLINA

March, 1967
Vol. 28 No. 3



MEDICAL JOURNAL

PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

IN THIS ISSUE:

Neonatal Sepsis

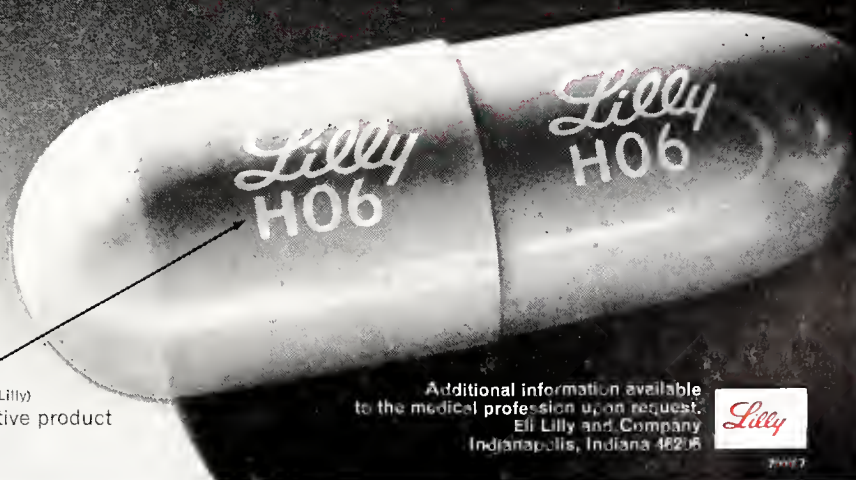
Program of the 113th Annual Session

MAR 25 1967

DIVISION OF
HEALTH AFFAIRS LIBRARY

Something special Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride,
227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine.



IDENTI-CODE™
(formula identification code, Lilly)
provides quick, positive product
identification.

Additional information available
to the medical profession upon request.
Eli Lilly and Company
Indianapolis, Indiana 46206



When the stagnant sinus must be drained...



Transillumination of the sinuses—diffuse shadow on right side of face indicates unilateral maxillary sinusitis.

In the common cold, Neo-Synephrine is unsurpassed for reducing nasal turgesence. It stops the stuffy feeling at once. It opens sinus ostia to re-establish drainage and lessen the chance of sinusitis. With Neo-Synephrine, in the concentrations most commonly used, decongestion lasts long enough for extended breathing comfort, without endangering delicate respiratory tissue. Systemic side effects are virtually unknown. There is little rebound tendency.

Neo-Synephrine[®] HCl

Brand of phenylephrine hydrochloride

is available in a variety of forms,
for all ages:

- 1/8% solution for infants
- 1/4% solution for children and adults
- 1/4% pediatric nasal spray for children
- 1/2% solution for adults
- 1/2% nasal spray for adults
- 1/2% jelly for children and adults
- 1% solution for adults (resistant cases)

Also NTZ[®] Solution or Spray
Antihistamine-decongestant

NORTH CAROLINA MEDICAL JOURNAL

OWNED AND PUBLISHED BY

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 28

MARCH, 1967

NUMBER 3

Neonatal Sepsis

DORIS Y. SANDERS, M.D., AND HENRY G. CRAMBLETT, M.D.

Since infection continues to be a significant cause of death in the neonatal period, a five-year experience in a large children's hospital has been reviewed to see if the pattern of infection was different from that described elsewhere, or if there was a significant change in the type of infection seen in recent years. This experience has been compared with that reported by others.

Methods

During the five-year period of this study, January, 1960, through December, 1964, the clinical records of all infants under 28 days of age admitted to the Columbus Children's Hospital (Columbus, Ohio) with a diagnosis of sepsis were reviewed. Selection of the charts for review was made solely on the basis of a positive antemortem blood culture or spinal fluid culture or both. The charts of 94 neonates (67 with septicemia and 27 with meningitis) were reviewed. Cultures were done by standard techniques.

Results

1. *Sex*: Sixty-three percent of the infants were males. This would be expected from the sex differences in the incidence of sepsis and meningitis in the newborn period previously reported by Washburn and others.^{1,2}

2. *Birth weight*: Thirty-five percent of all infants in the study group weighed less than 2500 gm at birth. Two and nine-tenths of all prematures admitted to the hospital

during the time of the study had positive blood cultures of meningitis, indicating a significant incidence of infection among premature infants. Watson's report that 40% of all neonatal meningitis occurs in prematures corroborates these data.³ Groover⁴ found that meningitis occurred approxi-

For editorial comment see page 103

mately 20 times as frequently in prematures as in full-term infants.

3. *Incidence of anomalies*: Fifteen patients in the study group had congenital anomalies. Eleven of these infants died. Defects included congenital heart disease in 5 patients, myelomeningocele in 4, intestinal atresia in 2, and genitourinary anomalies in 3. One patient who had a cleft palate survived.

4. *Blood incompatibilities*: During the period of this study, 648 infants had one or more exchange transfusions at this hospital because of blood group incompatibility. Seven infants from this group had positive blood cultures. Staphylococcus, coagulase positive, was cultured from the blood of 5 infants and *Escherichia coli* from the blood of 2 infants. All of these infants were sufficiently ill to require the immediate institution of therapy. This prevented a clear differentiation between transient bacteremia and septicemia.

5. *Other predisposing conditions*: Five infants were the products of cesarean section. Six mothers had febrile illnesses of undiagnosed nature at the time of delivery, and 6 had premature rupture of the membranes. Two mothers were diabetic and one had eclampsia.

From the Departments of Pediatrics and Medical Microbiology, The Ohio State University, College of Medicine and The Children's Hospital Research Foundation, Columbus, Ohio 43205.

Request for reprints to Department of Pediatrics, Bowman Gray School of Medicine, Winston-Salem, N. C. 27103 (Dr. Sanders).

Table 1
Septicemia

Total Isol.*	Etiologic Agent	48 hrs. or less*	Age of Infant at Onset of Illness			
			During 1st Wk.*	1-2 Wks.*	2-3 Wks.*	3-4 Wks.*
31	Staphylococcus coagulase positive	17	25	4	2	0
9	Staphylococcus coagulase negative	0	4	5	0	0
1	Enterococcus	1	1	0	0	0
1	Streptococcus viridans	1	1	0	0	0
1	Gamma Streptococcus	1	1	0	0	0
15	E coli	9	11	4	0	0
3	Klebsiella	3	3	0	0	0
2	Pseudomonas	1	2	0	0	0
2	Paracolon bacilli	2	2	0	0	0
1	Proteus	0	1	0	0	0
1	Mixed ^{†*}	0	1	0	0	0
—		—	—	—	—	—
67		35	52	13	2	0

*Number of infants with positive blood cultures.

***Proteus*, *Pseudomonas*.

6. *Age at onset of illness*: The average age at the onset of illness in the group with septicemia was four days, and in those with meningitis nine days. The ages of the infants at onset of illness and the etiologic agents are listed in Tables 1 and 2.

7. *Etiology of sepsis*: Positive blood cultures were obtained in 67 cases. *Staphylococcus*, coagulase positive, was recovered from 31 infants. *E. coli* was cultured from 15 patients. Coagulase-negative staphylococci were cultured from the blood of 9 patients. It is difficult to establish association

of coagulase-negative staphylococcal infection with disease.⁵ It is most often secondary to a change in host status, such as occurs in patients with ventriculo-cerebrospinal-fluid shunts.

It should be noted that these 9 infants all had pre-existing illnesses (see Table 3). All were treated with antibiotics. In this age group meningitis is often an accompaniment of generalized septicemia. Ziai and Haggerty,⁶ in their series of 71 infants with meningitis, reported 52 from whom positive blood cultures were obtained. In this study

Table 2
Meningitis

Total Isol.*	Etiologic Agent	48 hrs. or less *	Age of Infant at Onset of Illness			
			During 1st Wk.*	1-2 Wks.*	2-3 Wks.*	3-4 Wks.*
2	Staphylococcus coagulase positive	0	2	0	0	0
2	Pneumococcus	0	1	1	0	0
2	Listeria	0	2	0	0	0
5	Beta Streptococcus non-group A	1	0	2	2	1
6	E coli	1	3	2	1	0
4	Paracolon bacilli	2	3	1	0	0
2	Proteus	0	0	2	0	0
2	N meningococcus	0	0	2	0	0
1	Gram-negative unidentified	1	1			
1	Mixed**	0	0	1		
—		—	—	—	—	—
27		5	12	11	3	1

*Number of infants with positive cerebrospinal fluid cultures.

***Staphylococcus*, *paracolon bacilli*.

cerebrospinal fluid cultures were positive in 27 neonates. The fact that nine different organisms were found indicates the futility

Table 3

Pre-existing Illnesses in Nine Neonates with Blood Cultures Yielding Coagulase-Negative Staphylococci		No. Cases
Congenital cardiac disease (both patients catheterized)		2
Pyelonephritis		3
Severe diarrhea and sclerema		1
Hemolytic disease of the newborn		1
Hyaline membrane disease		1
Premature with pneumonia		1
		—
		9

of guessing the etiologic organism (Table 2). Eight of these 27 patients had a positive blood culture yielding the same agent as that found in the cerebrospinal fluid. Blood cultures were not done in 9 cases and were negative in 11.

8. *Laboratory data:* The total peripheral white blood cell count varied remarkably (Table 4). There was no correlation between the etiologic agents and the white blood cell response. White blood cell counts were recorded in 54 patients. Thirty showed a predominance of polymorphonuclear leukocytes. Twenty-five peripheral white blood cell counts were available for a review in patients with meningitis. Fifteen of these counts showed a predominance of segmented forms. Either extreme of the count was associated with a bad prognosis. All 6 infants

Table 4

Distribution of Total Peripheral White Blood Cell Count (WBC) Per Cubic Millimeter		
WBC/cu mm	Sepsis	Meningitis
1-5,000	2	4
5-10,000	8	7
10-20,000	28	6
20-30,000	13	6
30,000 or over	3	2
	—	—
	54	25

whose white blood cell count was less than 5000 expired. Four of 5 patients who presented with a white blood cell count of more than 30,000 expired.

The only finding in the spinal fluid which correlated with the prognosis was the protein content. Eleven patients had a protein content of more than 300 mg 100 ml, and only 1 of these survived, whereas 6 of 8 patients with less than 300 mg/100 ml on admission survived. This observation compares with the series reported by Yu and Grauaug.⁷

9. *Clinical illness:* This review reaffirmed the observation that the signs and symptoms of severe neonatal infection are frequently obscure. Temperatures were unstable in 38% of the patients with infection, and in 51% of those with meningitis. The initial temperature was less than 97 F in 15% of all the patients. In a study by Smith,⁸ 51% of the infants had unstable temperatures during the course of their illness. Jaundice has been reported to be more frequent in *E. coli* sepsis,⁸ but no correlation between any etiologic agent and jaundice could be made in this study, in which 14 infants had jaundice for which no specific cause could be found.

10. *Mortality:* The overall mortality in the group with sepsis was 32.8%. Excluding the infants with congenital anomalies, the rate was 25.4%. The mortality among all infants with meningitis was 66%. The mortality among infants with meningitis who had no known anomalies was 62%. Groover⁴ reported a death rate of 66% in patients with neonatal meningitis in an 11-year experience.

In those infants with a birth weight of less than 2500 gm, the mortality was 52% in infants with sepsis and 79% in those with meningitis.

Discussion

Neonatal infection continues to be a difficult problem. Meningitis and septicemia were selected for review since these infections can be documented by positive cultures. It is possible that the figures presented do not represent the true incidence of meningitis associated with septicemia, because lumbar punctures were not done in many cases. Meningitis has been reported in about 25% of patients with sepsis.⁹

The spectrum of organisms causing neonatal sepsis has remained essentially unchanged throughout the years. Dunham¹⁰ reported beta hemolytic streptococci, staphylococci, and gram-negative organisms as being the principal pathogens found in his review. Nyhan's review¹¹ also revealed beta streptococci to be the principal pathogens. More recent studies have shown the gram-negative rods to be the predominant etiologic agent in neonatal sepsis^{12,8} and in neonatal meningitis.^{3,4,6,7} If those infants with congenital anomalies are excluded and the strict criteria of Silverman and Homan¹³ applied, limiting cases to those of obscure origin, coagulase staphylococci apparently are still predominantly the etiologic agents.

Beta-streptococci, non-group A. The occurrence of 5 cases of meningitis due to beta hemolytic streptococcus, non-group A, determined by the Bacitracin disc differentiation method,¹⁴ is unusual but has been reported with increasing frequency.^{15,16}

The varying types and dosages of antibiotics, and the complications of the individual patients, made an analysis of the effect of specific antimicrobial therapy impossible. At the present time there is no routine antibiotic regimen for sepsis in the newborn which is widely used or wholly satisfactory.

Summary

The clinical records of all infants under 28 days of age with positive blood or spinal fluid cultures over a five-year period were reviewed. A cross-section of this population revealed one third to be prematures, and 16% to have congenital anomalies. Coagulase-positive staphylococcus was the predominant agent in septicemia, and *Escherichia coli* and beta streptococci, non-group A, were recovered most frequently in meningitis.

In spite of newer forms of antibiotics, and the supposedly better training for physicians in the early detection of sepsis in the newborn, it is evident that the answer to the problem has not yet been reached. It is clear that the possibility of sepsis should

be considered at the earliest possible moment, if the morbidity and mortality are to be reduced. The physician should be constantly aware that any sick neonate may have sepsis and that therapy must be instituted before the definitive diagnosis has been established.

This investigation was supported by a Public Health Service Fellowship (1 F2-HD-28, 968-01) from the National Institute of Child Health and Human Development and by Grants A1 6270, AM 8691, and NB 5409 from the National Institutes of Health.

References

1. Childs, B., Cantolino, S., and Dyke, M. K.: Observations on Sex Differences in Human Biology, *Bull Johns Hopkins Hosp* 110: 134-144 (March) 1962.
2. Washburn, T. C., Medearis, D. N., Jr., and Childs, B.: Sex Differences in Susceptibility to Infections, *Pediatrics* 35: 57-64 (Jan) 1965.
3. Watson, D. G.: Purulent Neonatal Meningitis, *J Pediat* 50: 352-360 (March) 1957.
4. Groover, R. V., Sutherland, J. M., and Landing, B. H.: Purulent Meningitis of Newborn Infants: Eleven Year Experience in the Antibiotic Era, *New Eng J Med* 264: 1115-1120 (June) 1961.
5. Quinn, E. L., Cox, F., and Fisher, M.: The Problem of Associating Coagulase Negative Staphylococci with Disease, *Ann N. Y. Acad Sciences* 128: 428-442 (July) 1965.
6. Ziai, M., and Haggerty, R. J.: Neonatal Meningitis, *New Eng J Med* 259: 314-320 (Aug) 1958.
7. Yu, J. S., and Grauberg, A.: Purulent Meningitis in the Neonatal Period, *Arch Dis Child* 38: 391-396 (Aug) 1963.
8. Smith, R. T., Platou, E. S., and Good, R. A.: Septicemia of the Newborn; Current Status of the Problem, *Pediatrics* 17: 549-575 (March) 1956.
9. Haggerty, R. J.: Bacterial Infections in the Newborn, *Ped Clin N Amer* 8: 481-492 (May) 1961.
10. Dunham, E. C.: Septicemia in the Newborn, *Amer J Dis Child* 45: 229-253, (Feb) 1933.
11. Nyhan, W. L., and Fousek, M. D.: Septicemia of the Newborn, *Pediatrics* 22: 268-278 (Aug) 1958.
12. Buetow, K. C., Klein, S. W., and Lane, R. B.: Septicemia in Premature Infants, *Amer J Dis Child* 110: 29-41 (July) 1965.
13. Silverman, W. A., and Homan, W. E.: Sepsis of Obscure Origin in the Newborn, *Pediatrics* 3: 157-176 (Feb) 1949.
14. Estels, L. A., and Shuey, H. W.: Comparison of Fluorescent Antibody, Precipitin and Bacitracin Disk Method in the Identification of Group A Streptococci, *Amer J Clin Path* 40: 591-597 (Dec) 1963.
15. Mannik, M., Baringer, J. R., and Stokes, J.: Infections Due to Group B Beta-Hemolytic Streptococci: Report of Three Cases and Review of the Literature, *New Eng J Med* 266: 910-913 (May) 1962.
16. Kexel, G., and Schonbohm, S.: Streptococcus agalactiae as a Cause of Meningitis in the Newborn, *German Medical Monthly* X: 445-448 (Nov) 1965.

Prosthetic Cardiac Valve Replacement in Young Patients

FREDERICK H. TAYLOR, M.D., AND HUGH M. FOSTER, M.D.

Correction of stenotic or insufficient heart valves by surgery is frequently done in heart centers throughout the world. For unexplained reasons the mitral and aortic valves are more commonly deformed than the pulmonary or tricuspid valves. Diseases which produce enough valve damage to require surgical correction include congenital anomalies, rheumatic fever, bacterial endocarditis, trauma, and myocardial infarction. Surgeons prefer to restore damaged valves to normal function by preserving the patient's own tissue, because to date, the completely satisfactory prosthetic valve has not been made. Unfortunately, severe calcification and rigidity of valve leaflets or the actual absence of valve tissue often make preservation of the patient's own valve impossible, if good functional results are to be obtained.

Several types of artificial heart valves are in use, but the widest experience in most centers has been with the caged ball-valve prosthesis developed by Starr and Edwards¹ or its modifications. For obvious reasons, by far the great majority of these prostheses have been used in adults. Most candidates for valve replacement have had heart disease for many years, during which they have been maintained on medical treatment. The physiologic and pathologic changes in heart valves which demand prosthetic replacement usually take several years to appear.

Recent Reports

A number of recent reports in the literature indicate that some patients under 20 years of age have enough heart valve damage to require surgical correction.

Angelino and others,² in their series of 600 patients who underwent mitral commissurotomy, included 11 children under 16 years of age. All of these children survived, and the results were reported as good to very good in all cases. Gray³ reported three patients, aged 12, 14, and 16 years, who did

well following mitral valvotomy. He stated, "If there are dangerous symptoms as a result of severe obstructive lesions, the presence of overt rheumatic activity should be no bar to operation."

In 1961 Borman and colleagues⁴ described mitral valvotomy in 13 patients between the ages of 9 and 16 years. These 13 children accounted for 7.5% of the valvotomies done on their service. The authors pointed out that mitral stenosis may be more dangerous than active rheumatic fever. They added, "Progressive mitral stenosis should be relieved surgically, whatever the age of the patient."

In 1964 Cherian and others⁵ reported the results of mitral valvotomy in 26 patients under the age of 20. Only 2 patients had flare-ups of rheumatic fever following surgery. The mitral orifice was less than 1 cm in diameter in 87% of their cases, and calcification was present in 6%. Sixty-eight percent of the patients obtained good to excellent results. The surgical mortality was 13%.

Young and Robinson⁶ in 1964, reported the first successful prosthetic valve replacement in an infant. Their patient, a ten-month-old girl, had congenital mitral stenosis. Preservation of her own valve was technically impossible. They replaced it with a Starr-Edwards ball-valve prosthesis, but frankly pointed out that a larger prosthesis would be needed as the child grew.

In 1965 Linde and co-workers⁷ reported two children, aged 10 and 13, in whom mitral valves were replaced with Starr-Edwards ball-valve prostheses. Fortunately, the valve rings were dilated enough to accept 3-M, adult-size valves, obviating the need for larger prostheses as the children grew. Both of these children were doing well a year or more after operation.

Collins and his co-workers,⁸ in 1966, reported on 25 patients under 20 years of age who underwent operations for mitral valve disease. In 6 of these patients 3-M adult

Request for reprints to 1012 King's Drive, Charlotte, N. C. 28207.



Fig. 1. (Case 1). Preoperative chest roentgenogram obtained Nov. 19, 1963, showing left ventricular enlargement.

size Starr-Edwards prostheses were used to replace mitral valves; the tricuspid valve was replaced simultaneously in one, and a ventricular septal defect was closed in another. Four of the six children with valve replacements survived and were well one-half to three years after operation. The authors noted that only one of 22 children with rheumatic heart disease had a reactivation of rheumatic fever after surgery.

Smeloff and others⁹ recently reported two children in whom they replaced aortic valves with their modification of the ball-valve prosthesis. One child, a 12-year-old girl with aortic insufficiency and a blood pressure of 90 systolic, 60 diastolic, withstood valve replacement well and two years later had a normal electrocardiogram and a decrease in heart size. The other child, an 8-year-old boy with aortic stenosis and a pressure gradient of 50 mm of mercury across the valve, was alive ten months after valve replacement. He had a short diastolic murmur, indicating some leakage around the valve ring. The authors pointed out that 7.5% of all asymptomatic children with aortic stenosis may die suddenly of ventricular fibrillation. Despite this statement, we would be reluc-

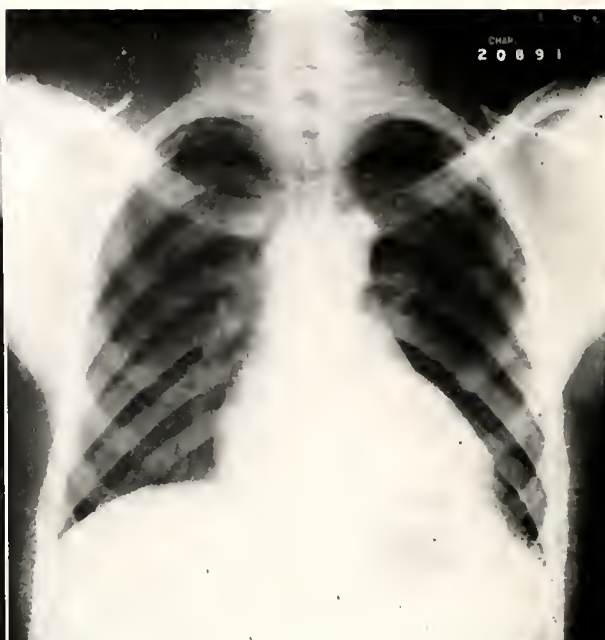


Fig. 2. (Case 1). Roentgenogram made June 14, 1966, 2½ years following aortic valve replacement. Significant decrease in heart size has occurred.

tant to insert an aortic prosthesis into an 8-year-old child with a pressure gradient of only 50 mm of mercury across the valve.

The present report concerns four patients under 20 years of age in whom prostheses were used to replace the aortic valve in two, and the mitral valve in two.

Case Reports

Case 1

A 12-year-old Negro boy was admitted to the hospital on Dec. 3, 1963, complaining of easy fatigability and severely impaired tolerance of exercise. He had acute rheumatic fever when 8 years old, and a second attack a year later complicated by cardiac failure. He was seen regularly in the Children's Heart Clinic, but he complained of increasing dyspnea despite good medical management and bed rest. On admission to the hospital his blood pressure was 130/0. The veins of the neck were distended and the carotid arteries showed visible pulsations. The radial pulse was of water-hammer quality.

The left side of the heart was enlarged, and there was a precordial heave. Harsh systolic and diastolic murmurs were heard over the aortic area. A soft apical systolic murmur was present. The rhythm was regular. The lungs were clear, the abdomen was normal, and there was no edema.

An electrocardiogram indicated left ventricular hypertrophy. A chest film (Fig. 1) showed moderate left ventricular enlargement.

On Dec. 6, 1963, open-heart surgery was performed,



Fig. 3. (Case 2). Preoperative roentgenogram (Aug. 11, 1964) showing left ventricular enlargement.

using total cardiopulmonary by-pass, general body hypothermia (28 C), and cardiac hypothermia. The aortic cusps were completely insufficient as the result of curling and redundancy of the leaflets. No calcium deposits were noted. A No. 10 Starr-Edwards adult ball-valve was sutured in place after the cusps were excised. The heart required one electric shock and then maintained normal forceful rhythm.

The child had an uncomplicated postoperative course and was discharged two weeks after operation with a blood pressure of 110/80. Microscopic examination of the excised valve showed fibrosis but no calcification.

The patient has since received monthly intramuscular injections of Bicillin, but no digitalis or anticoagulants. Chest films showed a decrease in heart size (Fig. 2). On October 18, 1966, he was examined in the Heart Clinic. At that time he was attending school regularly and playing basketball without a recurrence of symptoms. The valve functioned normally with no evidence of regurgitation.

Case 2

A 15-year-old girl was admitted Aug. 10, 1964. There was no history of rheumatic fever, but eight months previously she had been hospitalized for congestive failure and mitral insufficiency. She was eight months pregnant. The failure was corrected by bed rest and digitalis, and she underwent a successful cesarean section. She failed to do well on a regimen of digitalis and limited activity. Increasing dyspnea on exertion and ankle edema were noted.

On examination her left ventricle was found to be enlarged (Fig. 3). A systolic thrill was felt over the third and fourth left intercostal spaces. A grade IV high-pitched systolic murmur was heard at the apex.



Fig. 4. (Case 2). Roentgenogram taken Sept. 19, 1964, one year after replacement. The prosthetic valve is well visualized and the left ventricle is smaller.

There was 1 plus ankle edema. An ECG showed left ventricular hypertrophy and strain.

On Aug. 14, 1964, open heart cardiomy was done, using total by-pass and general and regional hypothermia. A thrill was felt over the right and left atria. Digital exploration of the right atrium revealed a slight regurgitant jet through the tricuspid valve. Exploration of the left atrium disclosed rolled-up margins of the mitral leaflets, with marked insufficiency. The mitral valve was excised and replaced by a M-3 Starr-Edwards ball-valve. The heart responded well to one electric shock on discontinuation of the by-pass and maintained a normal rhythm. The postoperative course was uneventful and the patient was discharged on the 14th hospital day on a regimen of Digitoxin and prophylactic penicillin. Pathologic examination of the excised valve and chordae tendinae showed marked thickening and fibrinoid collagen degeneration.

The patient did well for one week at home and then experienced nausea, vomiting, diarrhea, and abdominal pain. She was readmitted to the hospital on Sept. 13, 1964, with a temperature of 102 F, dehydration, and a tender, palpable spleen. No petechiae were found at any time. The white blood cell count was 12,000, and the C-reactive protein test was positive. The anti-streptolysin titer was 250 Todd units. After several negative blood cultures, one culture grew hemolytic *Staphylococcus aureus*, which was sensitive to penicillin. A chest roentgenogram (Fig. 4) showed a significant decrease in heart size as compared to her preoperative film. Continuous intravenous drip of penicillin, 20,000,000 units daily, was given for a month.

The patient was discharged on Oct. 18, 1964, completely asymptomatic. She was observed in the Heart Clinic, and when last seen on Nov. 1, 1966, she was working in a school cafeteria. Digitalis was no longer needed, but she was given sulfadiazine, 0.5 gm daily, prophylactically. The valve functioned well. A soft aortic systolic murmur was heard. To the examiner's horror, a broomstraw was noted in her ear lobe. This had been inserted the week before to establish a hole for earrings. The straw was promptly removed, and fortunately there was no infection.



Fig. 5. (Case 3). Preoperative roentgenogram (Dec. 11, 1964) showing slight left ventricular enlargement.

Case 3

A 16-year-old Negro girl had acute rheumatic fever at the age of nine. She was observed in the Children's Heart Clinic and given prophylactic doses of Bicillin, 1,200,000 units monthly. She was admitted to Charlotte Memorial Hospital, Dec. 11, 1964, complaining of dyspnea on exertion, orthopnea, edema, and frequent syncope of one year's duration. These symptoms persisted despite a regimen of digitalis and diuretics. The blood pressure was 130/40. A water-hammer pulse was noted. Aortic systolic and diastolic thrills and murmurs were present. The ECG showed left ventricular hypertrophy and first degree atrio-ventricular block. A chest film (Fig. 5) showed only slight left ventricular enlargement. Right heart catheterization showed normal oxygen saturation and pressure levels. An aortogram demonstrated marked aortic regurgitation and a minimal jet of mitral regurgitation.

The patient wished to try conservative management a while longer. She tried to resume her studies, but was unable to do so because of increasing dyspnea and frequent episodes of syncope.

She was readmitted a few months later requesting

surgical treatment. On June 9, 1965, open heart surgery was performed, aided by cardiopulmonary bypass, mild hypothermia, and left coronary artery perfusion. The aortic leaflets were rolled, redundant, and notably insufficient. Some degree of stenosis resulted from fusion of the commissures. There was no calcification. The aortic cusps were replaced by a No. 10 Starr-Edwards valve. After defibrillation with one shock, the heart maintained normal rhythm. The excised valve showed fibrosis with mucoid degeneration.



Fig. 6. (Case 3). Lateral chest film showing aortic prosthesis in proper position.

The postoperative course was uneventful and the patient was discharged on the 14th hospital day. She was given maintenance doses of Coumadin, Bicillin, and Lanoxin, but the latter was soon discontinued. The prothrombin time was kept at prophylactic levels. She returned to school and attended regularly throughout the school year, taking an active role in extracurricular activities. She was seen again on June 7, at the completion of her school year. The blood pressure was then 104/68. The valve functioned well, without regurgitation.

A week or so later she pierced her ears with broom straws to accept earrings and left the straws in for one to two weeks. The puncture wounds became grossly infected and large cervical lymph nodes appeared. On July 2 she had a sudden onset of chills, fever, nausea, headache, and muscular aches. Two days later she was admitted in delirium, with a temperature of 104 F. The valve clicks were audible and no regurgitation was noted. A chest film (Fig. 6) showed the valve in proper position and minimal left ventricular enlargement. Two blood cultures grew hemolytic *Staph. aureus*. Despite massive doses of

chloromycetin and penicillin she followed a downhill course and died five days after admission.

Autopsy showed diffuse abscesses involving the brain, lungs, and kidneys. One small fibrinous vegetation lay on the cloth ring of the aortic prosthesis.

Case 4

A nine-year-old Negro boy was admitted to Charlotte Memorial Hospital May 17, 1966, in congestive heart failure. He had been hospitalized three times in the preceding two years in heart failure. Medical management had been difficult because of erratic intake of digitalis.

On admission the patient was orthopneic. The heart was enlarged, with the apex in the mid-axilla (Fig. 7). A grade IV apical systolic murmur was heard. There was a gallop rhythm. The liver was down 7 cm below the costal margin, and there was marked ascites. The hemogram was normal. The blood sedimentation rate was 28 (direct method). The anti-streptolysin-O titer was 125 Todd units. The ECG showed evidence of right and left ventricular hypertrophy.

The boy was given digitalis, diuretics and a low salt diet, and kept at bed rest. The congestive failure responded well. Right heart catheterization showed no evidence of shunt. The right ventricular pressure was 55/0. In view of three previous hospital admissions for cardiac failure, the clinical evidence of severe mitral insufficiency, and the unsatisfactory medical management, valve replacement was recommended.

On June, 1, 1966, open heart surgery under cardiopulmonary by-pass and general hypothermia (25 C) was done. The posterior mitral leaflet was completely shriveled up and rolled back to the annulus, producing severe insufficiency. The anterior leaflet was excised, but the rolled-up posterior leaflet was left in-

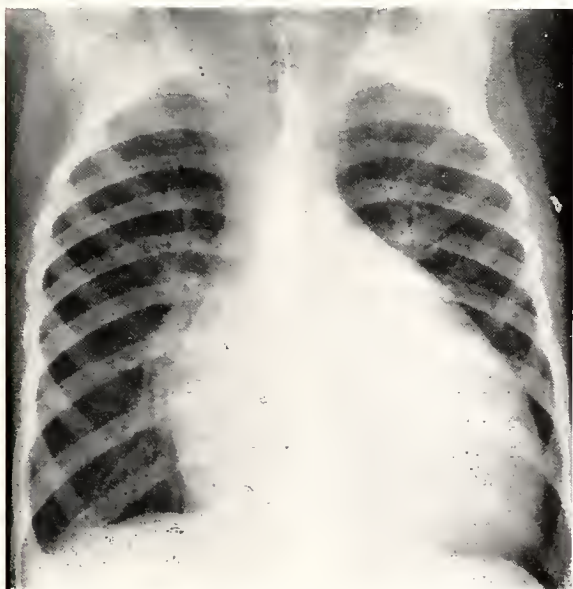


Fig. 7. (Case 4). Preoperative chest film showing massive cardiac enlargement.

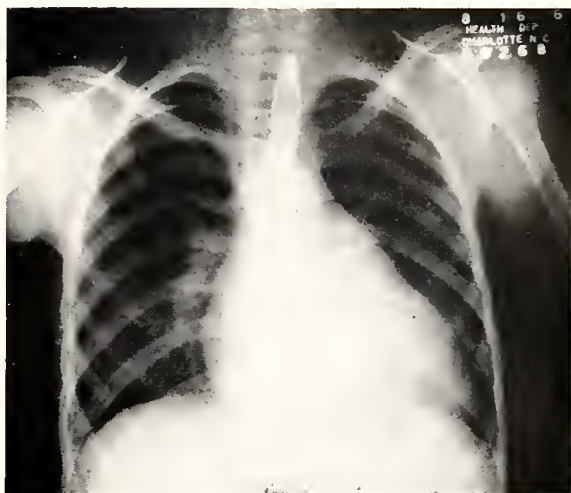


Fig. 8. (Case 4). Roentgenogram taken three months following mitral valve replacement. Note decrease in heart size.

tact. A size 3-M Starr-Edwards valve was sutured into the mitral annulus. On completion of the by-pass, the heart resumed normal rhythm. The postoperative course was satisfactory.

Examination of the excised valve and atrial biopsy showed mucoid degeneration of collagen and two Aschoff bodies. The patient was discharged on the 20th postoperative day on Coumadin, Lanoxin (discontinued a month later), and Bicillin therapy. Chest film obtained two months after operation showed a decrease in heart size (Fig. 8). He was seen in the Children's Heart Clinic on Oct. 11, 1966, at which time he was back in school, running after school, and feeling quite well. The valve functioned normally, and there was no evidence of cardiac decompensation.

Discussion

Prosthetic heart valve replacement is reserved for those patients who have severely damaged valves and hemodynamic abnormalities. For no patient should valve replacement be recommended who has mild to moderate hemodynamic changes. Patients with insufficient or stenotic valves who are comfortable and productive on medical management are not candidates for prosthetic valves. Byron¹⁰ has pointed out well the folly of "surgical one-upmanship" by those interested in inserting as many artificial valves as possible.

Aortic valve replacement is recommended for severe aortic stenosis or regurgitation which is producing syncope, angina, or loss of myocardial reserve not controlled by good medical management. Patients with severe

aortic valve lesions are likely to die suddenly, and valve replacement may be urgent.

A more conservative attitude should be taken toward mitral valve replacement. Many people with mitral valve disease live comfortable, productive lives for many years on good medical management.

One should not wait, however, until advanced left ventricular hypertrophy and dilation occur in mitral insufficiency before recommending valve replacement. Once the patient with mitral insufficiency cannot be controlled well on medical treatment, he should have a new valve. The patients with mitral stenosis require surgery when medical treatment does not control the lessened myocardial reserve, hemoptysis, or embolic phenomena. Pure mitral stenosis in children can nearly always be corrected without the use of a prosthetic valve.

Summary

A review of the surgical treatment of diseased heart valves in children has been presented. Age should not be a deterrent to recommending repair or replacement of damaged heart valves. The fear of acute flare-ups of rheumatic fever following surgery does not seem warranted. Criteria for operating on children are presented. The most compelling indications for surgical repair of their valves are clinical findings noted on the history and physical examination. Pressure gradients across valves detected by left heart catheterization, or evidence of regurgitation on angiocardiographic stu-

dies lend additional weight to surgical recommendations.

Four children, two with aortic valve replacement and two with mitral valve replacement, are presented. All four withstood surgery well, and obtained excellent results. One child died a year after operation from septicemia following ear-lobe punctures for earrings. Three are alive and well six months, two years, and three years following surgery.

This work was supported in part by the Childrens Heart Clinic, Heart Services of Charlotte and Mecklenburg County, and The Crippled Children's Division of The North Carolina State Board of Health

References

1. Starr, A. and Edwards, M. L.: Mitral Replacement: Clinical Experience with A Ball-Valve Prosthesis, *Ann Surg* 154: 726-740, 1961.
2. Angelino, P. F., Levi, V., Brusca, A. and Actis-Dato, A.: Mitral Commissurotomy in the Younger Age Group, *Amer Heart J* 51: 916-925, 1956.
3. Gray, I. R.: Mitral Valvotomy in the Young, *Lancet* 2: 1263-1264, 1958.
4. Borman, J. B., Stern, S., Shapiro, T., Milwidsky, H., and Braun K.: Mitral Valvotomy in Children, *Amer Heart J* 61: 763-769, 1961.
5. Cherian, G., Vytilingam, K. I., Sukumar, I. P., and Gopinath, N.: Mitral Valvotomy in Young Patients, *Brit Heart J* 26: 157-166, 1964.
6. Young, D. and Robinson, G.: Successful Valve Replacement in an Infant with Congenital Mitral Stenosis, *New Eng J Med* 270: 660-664, 1964.
7. Linde, L. M., Harper, J. A., Chuang, K. A. and Mulder, D. G.: Mitral Valve Replacement in Children, *J Thorac Cardiovasc Surg* 49: 475-484, 1965.
8. Collins, H. A., Daniel, R. A., Jr., Scott, H. W., and Puyau, F. A.: Surgery for Mitral Valvular Disease During Childhood and Adolescence, *J Thorac Cardiovasc Surg* 51: 639-648, 1966.
9. Smeloff, E. A., Cayler, G. C. and Smith, D. F.: The Use of Valve Prostheses in Childhood, *J Thorac Cardiovasc Surg* 51: 839-943, 1966.
10. Byron, F. X. and Timmes, J. J.: Editorial, *Ann Thorac Surg* 2: 274-275, 1966.

The diet ought to be suited to the age, constitution and manner of life; a sedentary or studious person should live more sparingly than one who labors hard without doors. Many kinds of food will nourish a peasant very well, which would be almost indigestible to a citizen, and the latter will live upon a diet on which the former would starve.—William Buchan, M.D.: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines, etc.*, Philadelphia, Richard Folwell, 1799, p 65.

Aminopyrine and Agranulocytosis

Review and Report of Six Cases

CHARLES FRED ZERNECHEL, M.D.

Granulocytopenia is the most common adverse hematologic reaction to drugs.¹ The drugs producing this phenomenon are few, but because of its seriousness it is imperative that the practitioner be aware of the danger. In 1955 the American Medical Association organized a Study Group on Blood Dyscrasias. By 1963 eight hundred thirty cases of drug-associated agranulocytosis had been reported to the Registry. Table 1 gives the results.

Aminopyrine was the first drug to be recognized as a causative factor in agranulocytosis.² Recently six patients in whom this syndrome was associated with a history of prolonged ingestion of a sulfonated derivative of aminopyrine (dipyrene) have been seen in this institution, five on the pediatric service. In view of the mortality rate of 20%-50% associated with this disease,¹ it is felt that attention should be focused on the subject once again.

History

Aminopyrine, one of the pyrazolone group of drugs, was introduced as an effective analgesic-antipyretic in 1879. The drug gained worldwide acceptance during the nineteen twenties and thirties. It was estimated that during the early thirties 30 million prescriptions for aminopyrine-containing drugs were written annually in the United States alone.³

Agranulocytosis was first described as a clinical entity in Germany by Schultz in 1922, and in the United States by Lovett⁵ in 1924. The exact cause of the new malady remained obscure for several years. Early observers suspected the existence of a constitutional defect in the granulopoietic tissue, and felt that fatigue, menstruation, or infection precipitated decompensation of bone marrow.⁶ Others attributed the reac-

tion to a bacterial agent,^{5,7,8} most commonly *Bacillus pyocyaneus*, or a bacterial toxin.⁹

In 1910 Selling¹⁰ reported three cases of profound leukopenia resulting from benzene poisoning, but it was not until 1931, when Kracke¹¹ described a case of recurrent agranulocytosis in a patient ingesting large quantities of acetophenetidin, that drugs *per se* were incriminated.

The literature was subsequently flooded with reports of agranulocytosis associated with drug ingestion. In 1933 Kracke and Parker¹² reported that agranulocytosis was responsible for 1,500 deaths in the United States from 1931 to 1934. Of 172 documented drug-associated cases, 153 followed the use of aminopyrine. The authors concluded, "There can be little question that aminopyrine is causative in a large number of cases."

This impression was borne out by others,¹³ who noted that the increased incidence of agranulocytosis during the 1930s paralleled almost exactly the increased use of drugs containing aminopyrine. The fact that no cases appeared in countries such as Denmark, where the medical profession was induced to refrain from prescribing the drug, deepened the suspicion.¹⁴

The difficulty of obtaining a reliable drug history was pointed out by Kracke and Parker,¹² who noted that only on chemical analysis was it learned that a patented drug one of their patients had been taking contained aminopyrine.

Because of the mounting evidence against aminopyrine, the United States Government prohibited over-the-counter sale of the drug in 1951.¹⁵ During the next two decades reports of aminopyrine-induced agranulocytosis nearly disappeared from the literature. In 1964 Huguley¹ reported that only seven cases of leukopenia associated with aminopyrine had been received by the Registry on Blood Dyscrasias in the past decade. Since 1960, however, 18 cases, 7 of

Table 1 (From Huguley¹¹)
Drugs Frequently Associated With Agranulocytosis

	Total	Only Drug Administered	Reported Incidence in Large Series (Percent)
Phenothiazines and related compounds	370	128	
Chlorpromazine (Thorazine)	183	74	0.13-0.7
Promazine (Sparine)	58	28	
Mepazine (Pacatal)	33	13	
Prochlorperazine (Compazine)	19	2	
Imipramine (Tofranil)	19	5	
Analgesics			
Aminopyrine (Amidopyrine, Cibalgine, Pyramidon)	64	14	0.86
	49	19	
Phenylbutazone (Butazolidin)	33	12	
Oxyphenbutazone (Tandearil)	6	3	
Antibacterial Drugs			
Chloramphenicol (Chloromycetin)	56	16	
Sulfonamides	92	20	0.01-0.38
Antithyroids			
Thiouracil, Propylthiouracil	24	19	0.45-1.75
Iothiouracil	28	17	1.5
Methimazole (Tapazole)			
Miscellaneous			
Phenindione (Dandilone, Eridone, Hedulin)	20	9	0.2
Tolbutamide	8	3	

them in children, had been reported. It was further noted that imports of dipyron had risen from none in 1958 to 18,879 pounds in 1962.

Table 2, listing current preparations containing aminopyrine or one of its derivatives, indicates the ready availability of these preparations today.

Clinical Manifestations

Incidence

In countries where aminopyrine is freely available, series of studies have shown that the overall incidence of agranulocytosis in persons on long-term therapy ranges from 1% to 6.9%.^{17,18}

Clinical picture

Agranulocytosis due to aminopyrine presents a rather typical picture which Israels¹⁹ described, in 1936, as follows:

Primary agranulocytosis appears to be a specific syndrome whose characteristic features are: 1) Sudden onset—usually a few days, rarely longer. 2) Lesions of the mouth, often notable for their insignificance in relation to the severity of the illness; bacteriological examination reveals organisms of no special etiological significance. 3) Slight anemia—red cells usually above 3.5 million/mm³. 4) Granulocytes very low or absent; 5) Absence of

Table 2 (From Wilson and Jones¹⁶)
Aminopyrine and Dipyron Preparations

Aminopyrine	Dipyron
Amidofebrin	Pyralgin
Amidopyrazoline	Barone
Anafebrina	Dimethone
Novamidon	Di-Podil
Pyradome	Dipral
Pyramidon	Dipronfarn
Amidopyrine	Diprone
Larodon	Dprone
Methapyrone	Fevonil
Novalgin	Hyprone
Phenazone	Key-Pyrone
	Methanipyrone
	Narone
	Nartate
	Novaldin
	Pydirone
	Viperone

hemorrhages; 6) No enlargement of lymphatic glands; 7) No, or at most, very few immature white cells in the circulating blood.

Other observers have commented that sensitive individuals often have a chill followed by fever and malaise immediately after taking the drug. As the granulocytes disappear over a six to ten hour period, the symptoms may also disappear.¹⁷

The subsequent course depends on whether the patient, because of lowered resistance,

becomes infected. The most common manifestation of sepsis in the severe form of the disease is a severe necrotizing tonsillitis.^{20,21} Examination of the blood usually reveals the underlying cause.

As noted above, the primary blood change occurs in the granulocytic series and is dependent on such factors as the lapse of time since ingestion, and individual sensitivity. The total leukocyte count is rarely above 2000/cu mm and may fall as low as 500/cu mm. Total granulocytes may vary from none to 200/cu mm or more. Relative lymphocytosis results.¹⁶

The bone-marrow picture also varies according to the duration of the disease. Granulocytes may be completely absent or markedly decreased. Concomitantly there is an increase in mature and immature myelocytes. Subsequently the marrow may undergo changes progressing from a hyperactive myelocytic phase to a hyperplastic promyelocytic-myeloblastic stage. In the most severe cases, even these immature forms disappear, leaving a reticular marrow where the only recognizable forms are reticular cells, erythroblasts, and megakaryocytes.^{20,22,23}

Mechanism

With the causal relationship between aminopyrine and agranulocytosis clearly established, the nature of the mechanisms involved came under investigation. A multitude of theories were evolved, ranging from a defect in a "maturation factor" which arrested granulocytic development at the myeloblast-myelocyte stage,²⁴ to direct toxic effects of aminopyrine on the bone marrow.²⁵

In general, however, two principal theories predominated. The first of these was based upon Selling's report of the toxic effects of benzene upon the bone marrow. Those following this line of thought felt that the fault must lie in the benzene ring of aminopyrine.^{26-28,32} This theory was promptly discounted by Davis²⁶ and Hertz,³⁰ who noted that aminopyrine was not a benzene but a pyrazolone derivative (Fig. 1).

The second school of thought held individual idiosyncrasy or allergy responsible.^{24,29}

It was difficult to prove or disprove either theory by mere speculation.

In 1934 Miller³¹ administered aminopyrine to 16 dogs, and although he found no

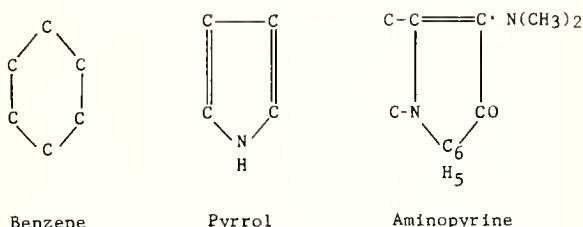


Figure 1

decrease in circulating granulocytes, he observed a marked suppression of granulocytes and a prominent shift toward more primitive cells in the bone marrow. He concluded that aminopyrine spared the circulating granulocytes and exerted its toxic effects upon the bone marrow. Hoffman³¹ reported similar results in rabbits.

The same year Squier²¹ reported a case in which a patient having recovered from granulocytopenia induced by ingested aminopyrine was given patch tests using 10% suspensions of aminopyrine. Twenty-four hours later chills, fever, malaise, and bone-ache were experienced. During the following 36 hours the white cell count fell from 5540/cu mm to 2700/cu mm before returning to normal 48 hours later. Prausnitz-Kustner tests were negative. From this Squier postulated that agranulocytosis was best explained on the basis of a "specific allergic drug hypersensitivity."

Other investigators attempting to further define this "allergic" state by means of various patch tests, scratch tests, and intradermal injections met with failure.³³⁻³⁵

The first controlled study of the problem in human beings was carried out by Simon,³ in 1936, on 103 subjects. Failing to produce a single case of bone marrow depression, he concluded that granulocytopenia is a matter of individual susceptibility, and except in the presence of some predisposing factor does not occur. This impression was corroborated by Dameshek,³⁶ who, by administering aminopyrine orally, produced the syndrome in two of four patients who had recovered from the disease. Although results

of scratch tests were again negative, he found that intradermal injection of a mixture of blood serum and aminopyrine produced strikingly positive results in three subjects and was followed by the full-blown disease in two. He therefore suggested a possible drug-protein linkage as the basis of the "allergic" reaction.

Because of the decline in the incidence of agranulocytosis which followed prohibition of over-the-counter sales in 1938, little research was carried out until the 1950s. At that time Brodie³⁷ reported on the metabolism of aminopyrine. It was found that an orally administered dose was rapidly and essentially completely absorbed from the gastrointestinal tract, reaching a peak plasma level in two hours. Blood levels declined from 10% to 30% per hour, the drug and its metabolic products being excreted in the urine.

Granulocytes disappear from the peripheral blood within one hour of administration of aminopyrine, with cellular destruction progressing from the most mature to the immature forms. Moeschlin and Wagner²³ postulated that the combination of aminopyrine and a serum protein reacted to produce agglutination of the granulocytes, which were themselves destroyed in the lungs. This increased peripheral destruction would explain the characteristic progression of bone-marrow destruction. They felt, therefore, that the evidence was sufficiently strong to support the conclusion that aminopyrine-induced agranulocytosis is in the nature of an antigen-antibody reaction.

In 1955 Moeschlin²⁰ reported that agglutination tests performed on the sera of patients with agranulocytosis consistently produced positive results with leukocyte suspensions from healthy controls. With the offending antigen thus located in the serum, the schema shown in Figure 2 was proposed.

This development brought aminopyrine-induced agranulocytosis parallel with other immunocytopenias such as acquired hemolytic anemia and acquired idiopathic thrombocytopenic purpura. Moeschlin cautioned,

however, that the combination of a chemical substance with the leukocyte might induce the body to produce an antibody directed not only against the above antigen but also

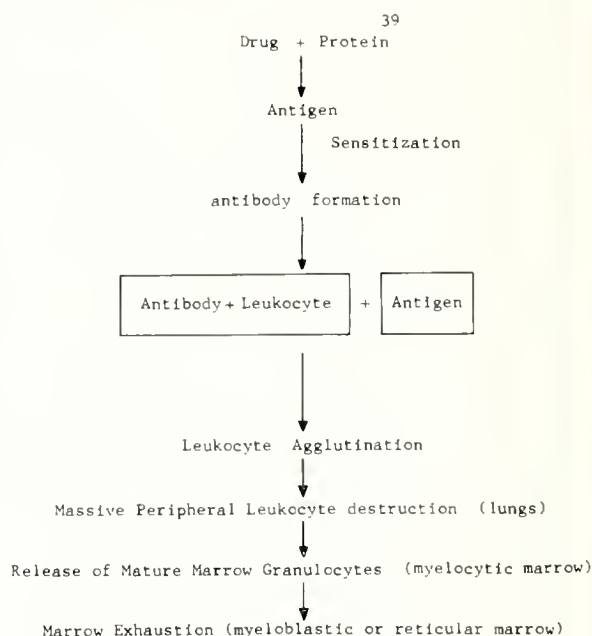


Figure 2. (From Gellis and Kagan³⁸)

against the leukocyte. This, in a sense, would represent the formation of isoantibodies and place the disease in the category of an autoimmune phenomenon.

In 1958 Halpern³⁸ characterized the nature of the antigen-antibody response to aminopyrine as follows:

- 1) Circulating antibody can be demonstrated by passive transfer of the patient's serum into controls.
- 2) In passive dermal transfer, the reaction can be elicited by either oral or parenteral administration of aminopyrine but not by local injection at the site of the serum injection.
- 3) The antigen-antibody complex formed in vitro is labile and can be easily dissociated by simple dialysis.
- 4) The antibody is rapidly fixed on passive transfer and the reaction reaches the maximum as soon as two hours after the intradermal injection of the serum.
- 5) The antibody is thermolabile and is destroyed by heating for 30 minutes at 58 C.
- 6) The antibody migrates with the beta-1, gamma-1, gamma-2 globulin fraction.
- 7) It is likely that the antigen-antibody complex is formed with the chemical substance without any previous conjugation.

Therapy

It has been calculated that the development of a mature granulocyte normally takes about eight days. Thus when only promyelocytes remain in the marrow, at least eight days will elapse before granulocytes reappear in the peripheral blood. When only the mature forms are depleted, granulocytes can be expected to reappear in two or three days. With severe depletion, however, leaving only the reticular cells, it will require from 12 to 14 days for the marrow and blood pictures to return to normal.²³

The goal of therapy is to prevent death from infection before recovery of the bone marrow is complete.¹⁷ The following measures are presently recommended by most authorities:

1. Discontinuance of the offending drug.
2. General supportive care.
3. Protective isolation for the severely ill or infected patient.
4. Broad prophylactic antibiotic coverage (penicillin, 1.2 million units a day given by mouth; streptomycin, 30 mg/kg a day given intravenously).
5. Steroid therapy if the patient's life is seriously endangered and if infection is absent or is being adequately treated (40-60 mg of prednisone or its equivalent daily).^{17,23,39,40}

Case Reports

Case 1

The patient, a 3½-year-old white boy, was well until three weeks prior to admission, at which time he had a "cold and an ear infection." He was successfully treated with one of the tetracyclines and did well until three weeks prior to admission. He had another cold and an ear infection, followed by persistent bouts of high fever, mouth ulcers, progressive anorexia, listlessness, and anemia. He was treated unsuccessfully with short courses of oxytetracycline (Terramycin), sulfisoxazole (Gantrisin), and chloramphenicol (Chloromycetin). At the same time he was given dipyrone (Pyralgine) for approximately one week. On March 9, 1965, the white blood cell count was 3400, with 30% granulocytes and 70% lymphocytes. Following referral to a second physician, a white cell count of 750/cu mm, 100% lymphocytes, was obtained. A mass was found in the right upper quadrant of the abdomen, suggesting a subdiaphragmatic abscess. The patient was given a unit of blood by transfusion and started on a course of penicillin.

On transfer to North Carolina Baptist Hospital on March 16, 1965, the patient was acutely ill and breathing laboriously. No rash or petechiae were noted. Mild, non-tender discrete anterior and posterior cervical adenopathy was present. The right tympanic membrane was retracted and injected but without exudate. An ulcerated lesion was present in the right naris. Small grey-white ulcers were noted on the medial aspect of both tonsils, which were enlarged. Abdominal examination revealed distension and a poorly outlined mass 5 cm below the right costal margin, thought to be the liver.

Accessory clinical data: The hemoglobin was 11 gm/100 ml and the white blood cell count 500 (100% lymphocytes). The bone marrow showed marked acellularity, scattered plasma cells, normal megakaryocytes, and a few scattered blastocytes. It was felt that this picture was consistent with toxic depression of the bone marrow. A blood culture revealed *Pseudomonas aeruginosa*. X-ray studies of the chest and urinary tract showed hepatomegaly but no other abnormalities.

Course in hospital: The intravenous administration of fluids and large doses of penicillin, kanamycin, and steroids were started. The patient's condition rapidly deteriorated, and on March 17, 1965, after vomiting a large amount of black "coffee-grounds" material, he lapsed into a coma and died.

Autopsy disclosed (1) a ruptured appendix with pelvic abscess and erosion into the bladder; (2) *Pseudomonas* septicemia; and (3) agranulocytosis.

Case 2

A white boy, aged three years four months, had been given dipyrone quite regularly for fever since early 1964. In November, 1964, he began having a series of minor illnesses marked by respiratory infection, pyoderma, tracheitis, and otitis, which responded to penicillin, erythromycin, and tetracycline. Two weeks prior to admission a sore throat, otitis, anorexia, and fever developed. Tetracycline, penicillin, and Bicillin were administered, but the fever persisted. On April 17, 1965, paronychia about the left thumb and other areas of pyoderma appeared. Pan-alba was given along with chlorpheniramine (Chlortrimeton) for postnasal drip.

On admission to North Carolina Baptist Hospital on April 20, 1965, the child was very lethargic, with a temperature of 102.6 F. The skin was pale and clear of rashes and petechiae. There was bilateral cervical adenopathy with tonsillar nodes measuring 1.5 cm in diameter, tender axillary adenopathy, and a 1.5-cm epitrochlear node on the left. The left orbit was fire-red, edematous, and teary; the erythema extended to the nasal bridge. The right tympanic membrane was injected and covered by purulent exudate. The external auditory canal was filled with dried exudate. The left tympanic membrane showed old scars. There was a thin, watery discharge. The tonsils were enlarged, erythemic, and covered by a membranous exudate; ulcerated lesions filled with necrotic material

were noted on the surface. The liver was enlarged 3 cm below the right costal margin. Paronychia of the left thumb and lymphangitis of the arm were present.

Accessory clinical data: The initial hematologic study revealed a hemoglobin level of 8.9 gm/100 ml and 1300 white cells, 100% leukocytes. A bone marrow study on April 21 revealed 50% cellularity, with a virtual absence of granulocytic precursors. Moderate numbers of plasma cells and megakaryocytes were present. Erythrocyte precursors were slightly decreased. This finding was considered to be consistent with toxic depression of the bone marrow.

Blood cultures disclosed *Escherichia coli*; throat and nasal cultures revealed coagulase-positive staphylococci. Roentgenographic study showed sinusitis of the left maxillary and ethmoid sinuses.

Course in hospital: The patient was treated with penicillin and kanamycin initially, then started on a course of colistin. On April 23 the buffy coats of three units of blood and one unit of packed cells were transfused. From April 20 to April 28 the white cell count remained between 1000 and 2000/cu mm, with no granulocytes. On April 29 prednisone therapy was begun, and by May 3 the white cell count had risen to 4000, of which 35% were of the granulocyte series. The patient's clinical status improved rapidly, and on his discharge on May 8, 1965, the number of white cells had increased to 19,000, 69% being granulocytic. The dosage of prednisone was gradually reduced at home, and the child has since done well.

Case 3

A three-year-three-month-old white boy had been given one or more teaspoons of dipyrone by his mother each time his temperature had risen above 101 F during the previous year. On February 27, 1964, he had undergone an uncomplicated elective right inguinal herniorrhaphy and tonsillectomy. On March 18, 1964, he became ill with rubeola and was given dipyrone three times for fever by his mother. Although the rash subsided, the fever continued, and otitis, pharyngitis, and pneumonia developed. Deelomycin therapy was begun. During the succeeding three days, he evinced increasing lethargy, acquired a cough, refused all food, and responded only to painful stimuli. The neck appeared swollen and tender. On the day of admission to North Carolina Baptist Hospital he had been anuric for 36 to 48 hours, and had had three diarrheal stools.

On admission on March 24, 1964, the child was extremely pale, responded only to painful stimuli, and had a temperature of 100.6 F. The pupils were constricted but reactive to light; the fundi were normal. Both tympanic membranes were white and thickened but free of discharge. The oral mucous membranes were dry and erythematous, and from three to four small ulcerative lesions were noted on the gingivae. The pharynx was injected but otherwise clear. The neck was swollen, hot, indurated, and tender on both sides. Slight nuchal rigidity was evident. Diffuse rales were heard throughout both lung fields. The abdomen was distended and tympanic, with tenderness in the right upper quadrant. No masses were felt.

Accessory clinical findings: A lumbar puncture disclosed no abnormalities. Cultures of the blood and spinal fluid were negative. A throat culture revealed B hemolytic enterococci; a culture of a specimen from the right ear produced coagulase-negative *Staphylococcus* and *E. coli*. A chest film demonstrated diffuse bilateral pneumonia with consolidation on the left.

An admission hemogram showed a hemoglobin level of 11.2 gm/100 ml. The white cell count was 4200/cu mm, with 2% segmented neutrophils, 7% bands, and 80% lymphocytes. Examination of the bone marrow done on March 26 revealed a decrease in both the erythrocytic and granulocytic series and markedly decreased platelets. The impression was "depression of the bone marrow in all elements with maturation arrest in the granulocytic series as seen in toxic depression."

Course in hospital: After receiving 1000 ml of fluids intravenously, the patient was able to void. The intravenous administration of penicillin was begun, and the child appeared more alert. On March 25 the white cell count was 2200, 100% mononuclear cells. By March 27 the number of white cells had increased to 8000, with 46% granulocytes. The areas of cellulitis of the neck became fluctuant and began to localize. Purulent discharge from the right ear began on March 28, and the patient was given sulfisoxazole for the ear infection. Five days later the cervical abscess was drained, and the child appeared well and healthy.

Case 4

The patient was a three-year-old white girl who had been regularly treated with dipyrone at home for fever since February, 1962. She was well until Sept. 22, 1962, when she suddenly experienced periumbilical pain while eating. Her mother noted that the child appeared febrile, but before any measures could be taken a convulsion ensued. The child was locally hospitalized the next day and treated for bronchopneumonia and hypochromic anemia for nine days. At the end of this period the abdominal pain and fever recurred. At that time the leukocyte count was recorded as 9000/cu mm, with 85% lymphocytes, 13% monocytes, 1% myelocytes, and 1% segmented neutrophils. Two days later the child was transferred to North Carolina Baptist Hospital.

A drug history from the local physician revealed that the patient had received short courses of erythromycin estolate (Ilosone), penicillin, nystatin (Mycostatin), chloramphenicol, sulfisoxazole, dimenhydrinate (Dramamine), and phenobarbital during the past year. She had received dipyrone during the previous two hospitalizations in addition to that given at home.

On admission the child was alert and did not appear acutely ill. The temperature was 104.1 F. Oral examination disclosed only erythema of the gingivae and pharynx. The tonsils were slightly enlarged. Mild cervical adenopathy was present in addition to enlarged axillary and inguinal nodes. The liver was palpated 3 cm below the right costal margin. The remainder of the physical findings were within normal limits.

Accessory clinical data: On admission the hemoglobin level was 12 gm/100 ml and the white cell count 2100/cu mm, with 94% lymphocytes and 6% monocytes.

A bone marrow examination showed marked reduction in granulocytic precursors. Promyelocytes and myelocytes were present, but more mature forms were rare. The impression was "marked granulocytic hypoplasia."

Course in hospital: In spite of antipyretic measures, the child had a generalized convulsion the first evening. Penicillin and tetracycline therapy was begun as the fever continued to spike to 105 F. The temperature continued to range between 101 and 103 F for the next few days before lysing to normal by the eighth day. By Oct. 18, 1962, the white cells numbered 9000, 36% being immature granulocytes. As the fever disappeared and the granulocytes increased, the child quickly improved and was discharged on Oct. 10, 1962. When she was seen two years after this episode she was asymptomatic but continued to exhibit notable granulocytopenia.

Case 5

A nine-year-old white girl had been successfully treated with penicillin for "flu" characterized by fever cough, and leg ache, three weeks before admission. On Feb. 20, 1962, a fever reaching 105 F at times developed in the absence of other symptoms, and was treated with penicillin and dipyrone. The fever persisted, and on Feb. 25 she was admitted to the local hospital, where a blood cell count revealed 3800 leukocytes with 68% lymphocytes. On Feb. 26 the white cell count was 2800, with 78% lymphocytes. Tetracycline (Achromycin) therapy was begun, and the patient was referred to North Carolina Baptist Hospital.

On admission on Feb. 28, 1962, the child appeared apprehensive and had a fever of 103 F. The skin was free of rashes and petechiae. Examination disclosed only marked erythema of the mucous membranes of the mouth and pharynx. The tonsils were moderately enlarged and free of lesions. The remainder of the physical findings were normal.

Accessory clinical data: The admission hemogram showed a hemoglobin level of 12 gm/100 ml, and a white cell count of 2000/cu mm, with 25 segmented neutrophils, 4 band forms, and 70% lymphocytes. The bone marrow on March 2 showed arrest of granulocytic maturation at the promyelocyte and myelocyte level, with no segmented neutrophils and only 1 band form in 500 cells. This picture was felt to be consistent with drug toxicity. Blood cultures were negative and a chest film was normal.

Course in hospital: Treatment was limited to aspirin during the child's hospitalization. The temperature continued to spike to 102 to 103 F from Feb. 28 to March 2, when it abruptly dropped to normal. Recovery was rapid and complete. On March 6, 1962, the day of discharge, the white blood cell count was 9000/cu mm, 49% of which were of the granulocytic series.

Case 6

A 45-year-old white woman with a history of allergy to aspirin and antihistaminics had been taking dipyrone for "colds and aching" since June, 1962. On May 27, 1963, she was admitted to the surgical service of North Carolina Baptist Hospital with a two-day history of pain in the right lower quadrant of the abdomen, vomiting, fever (101 F), and diarrhea. A diagnosis of acute suppurative appendicitis was made, and an appendectomy was performed on the same day. A white blood cell count done by the local physician had revealed only 2300 leukocytes, and the patient was therefore seen in consultation with the Department of Hematology. With the exception of the recent appendectomy scar and a grade II systolic murmur along the left sternal border, the physical examination revealed no abnormalities.

Accessory clinical data: An admission hemogram revealed the following values: hemoglobin, 12.3 gm/100 ml; 2300 leukocytes, with 2% metamyelocytes, 3% myelocytes, 1% promyelocytes, 1% plasma cells, 1% band cells, and 83% lymphocytes.

A bone marrow study done on June 10, 1963, was regarded as inadequate for diagnosis. Serum electrophoresis disclosed moderate elevation of gamma-globulin. Lupus erythematosus and agglutination tests were repeated with negative results.

Course in hospital: On May 28, 1963, the white blood cell count was 1300 with an absence of granulocytes. Fever ranging from 100 to 102 F persisted, and the patient was treated with penicillin and streptomycin. One unit of whole blood was transfused on May 29. On June 12 an antiglobulin consumption test revealed high titers of leukocyte antibodies. On June 13 epinephrine stimulation tests were performed, with no significant elevation of neutrophils. On June 14 prednisone therapy was begun and remission of the fever followed. The patient subsequently began to feel much better. By June 19 the number of white cells had increased to 6000, with 63% segmented neutrophils and 5% band forms. The prednisone was continued for eight days, during which the patient steadily improved. On June 28 she was discharged, feeling well and with a white cell count of 9000, with 55% granulocytes.

The bone marrow on July 10, 1965, was interpreted as being "consistent with a recovery phase of drug induced agranulocytosis."

Current Status

The only certain method of proving that a particular case of agranulocytosis is caused by aminopyrine is re-administration of the drug with the patient under close observation. For obvious reasons this procedure is rarely justified.¹⁷ Whether passive transfer or leukocyte agglutination tests are feasible remains to be seen. Nevertheless, in 1964 the Council on Drugs of the American Med-

ical Association issued the following statement:

The drug . . . is generally accepted as an effective analgesic and anti-pyretic. No convincing evidence to suggest that it is more effective or less hazardous than anti-pyretics has been presented nor can it be expected to work more rapidly than physical measures for lowering temperature particularly in the acutely febrile child. Indeed the advisability of reducing fever (a natural body defense mechanism) routinely has not been established.

It would be difficult indeed to defend the choice of (aminopyrine) as an anti-pyretic in all but the unusual febrile patient. As an analgesic the drug appears to possess no particular virtue other than convenience . . . An advisory panel (of the F.D.A.) recommended that the drug remain available, but that it be prominently labeled to indicate its potential for causing fatal agranulocytosis.⁴¹

Aminopyrine-induced agranulocytosis is the result of an antigen antibody reaction in a sensitive individual. Even though the incidence of this reaction is relatively low, the high mortality associated with the disease should prompt one to question whether such a chance should be taken merely to control fever.

It is apparent from the figures cited by Huguley, and from our own experience, that children now appear to be the principal victims. It is also apparent from the cases en-

countered in this institution that many instances of drug-associated agranulocytosis are not being reported to the Registry. The vast multitude of drugs and chemicals to which patients are currently exposed and the difficulty of proving that one particular drug has produced the reaction have contributed to this lapse.

It is important from a diagnostic as well as a prophylactic standpoint that the physician not only be aware of the drugs which can produce agranulocytosis, but be adept at eliciting a thorough drug history.

As for aminopyrine and its derivatives, the position of the Council on Drugs seems to be wise. It would be extremely naive to ignore the dangers inherent in this drug. It is doubtful that these agents would be used so freely if their toxic potential were more widely recognized.

Summary

1. The history, pathogenesis, and treatment of agranulocytosis associated with aminopyrine are reviewed and six new cases reported.

2. Aminopyrine-induced agranulocytosis is apparently the result of an antigen-antibody reaction in a sensitive individual.

References on Request

When we recommend regularity in diet, we condemn not every small deviation. It is next to impossible for people at all times to avoid some degree of excess, and living too much by rule might make even the smallest deviation dangerous. It may be prudent to vary a little, sometimes taking more, sometimes less, than the usual quantity of meat and drink, if due regard be had to moderation.—William Buchan, M.D.: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, etc., Philadelphia, Richard Folwell, 1799, p 67.

Tubal Ligation

LEWIS S. RATHBUN, M.D.

Since postpartum tubal ligation was introduced by Adair and Brown in 1939, it has become a force in family and population planning. This procedure for stopping future childbearing is ideal in people who should not have more children because of severe systemic or emotional disease or for eugenic reasons. Its use for socioeconomic reasons has increased gradually over the years, until now, in most areas, this is its chief purpose.

If we are to use a surgical procedure to limit childbearing for socioeconomic reasons, we must be sure that it is safe and will not do more harm than good. Mortality in published series ranges from one death in 2500 to one death in 600 ligations. In analyzing the deaths, however, we find that usually they can be attributed to intercurrent disease for which the procedure was done, or to another procedure performed at the same time. Pulmonary embolus is the most common cause of death.

In our own series at Memorial Mission Hospital we have had two postoperative deaths in 2500 operations. Both patients left the hospital in good condition. One was dead on arrival at the emergency room a week after discharge. No autopsy was done. The other patient had extremely severe varicosities. Although she had thrombophlebitis *post partum* and postoperatively, she was discharged in satisfactory condition. She was readmitted two weeks later with a pulmonary embolus, however, and died. Of course either of these patients could have had a postpartum pulmonary embolus without having had the tubal ligation.

The failure rate of the operation is reported as anywhere from 5% to 0.5%. The number in different series seems to vary with the number of operations done by interns. The most common cause of failure seems to

be tying round ligaments instead of tubes. In several reported cases the operator apparently became absent-minded and tied only one tube. The failure rate is difficult to assess accurately, because unquestionably many of the patients do not return to the original operator or clinic. The only failure that I know of in my own practice involved an ectopic pregnancy in the stump of a tube ligated by the Pomeray method at cesarean section.

Many efforts have been made to assess the mental attitudes of the patients after ligation. The summation of these studies seems to be that women who have a satisfactory number of children and who request ligation themselves will not regret having it done. In patients, especially the younger ones, who were talked into having the operation by physicians, social workers, in-laws, and the like, the percentage of regrets is high. As one might suspect, the higher the mother's parity, the fewer the regrets.

Most of the emotional problems caused by ligation seem to occur in women who are subsequently divorced, remarry, and then desire to have children by the second husband. Emotional problems also arise when a child dies following ligation. All authors agree that attitudes toward sex are seldom affected by the operation. If they are altered, it is usually for the better, because of relief from the fear of pregnancy.

Studies show that the incidence of pelvic disease and menometrorrhagia is not increased following tubal ligation.

Summary

Tubal ligation offers a method of conception control which is reliable if done by competent surgeons. The risk of subsequent regret or emotional disturbance on the part of the patient and her husband is slight if they sincerely want the procedure and have not been overpersuaded by others. Since some deaths have been associated with the operation, it should not be undertaken lightly.

Read before the Section on Obstetrics and Gynecology, Medical Society of the State of North Carolina, Asheville, May 3, 1966.

Request for reprints to 304 Doctors Building, Asheville, N. C. 28801.

A History of Presbyterian Hospital of Charlotte

JOHN CHARLES FARIS

Presbyterian Hospital arose as an outgrowth of a small, one-nurse hospital which had been established in 1898 by three prominent Charlotte physicians: Dr. John R. Irwin, the prime-mover, who was a descendant of one of the signers of the Mecklenburg Declaration of Independence; and Drs. C. A. Misenheimer and Robert Gibbon. Dr. Gibbon was a surgeon.¹ Even this humble beginning can lay claim to some degree of fame, for it was here that the first recorded use of x-rays to locate a foreign body in the trachea took place. Dr. H. L. Smith, a professor of physics at Davidson College, had been experimenting with a crude x-ray machine which he had assembled himself, and when a patient came to the hospital complaining of symptoms relating to a foreign body in his airway, Dr. Smith was called and asked to bring his machine to the hospital. This he did, and used it to locate the object, which proved to be a thimble. This was soon extracted by a surgeon.²

The hospital soon outgrew its small quarters and was moved to a building across the street from the First Presbyterian Church. In January of 1903 the hospital and its equipment were purchased by Dr. J. P. Munroe, the president of the North Carolina Medical School, and nine other faculty members, thus enabling the school to offer a more complete and comprehensive medical education.³ These men presented the hospital to the Presbyterian churches of the city, who then chartered it under the laws of the state. This charter contained a provision whereby any Presbyterian church of Charlotte or Mecklenburg County might elect a representative and participate in the hospital's management.²

In late 1903 the hospital again moved, leasing in conjunction with the medical college the building formerly occupied by the Arlington Hotel. The medical college occupied a large part of the first floor, leaving

the hospital space for 45 beds on the other two floors.¹ At this time Dr. J. R. Alexander became the hospital's first superintendent, a position which he held until 1923, and the Presbyterian School for Nurses was organized with Miss Ella MacNichols as superintendent.

The hospital continued to grow and in 1917 the Elizabeth College property, consisting of ten wooded acres and a large building, was purchased, remodeled, and equipped at a cost of approximately \$222,000. The new hospital was opened in early 1918 with 100 beds and ten bassinets.¹ By an unlucky twist of fate the campaign to raise the necessary funds opened on the very day that the United States entered World War I, and as might be expected, the campaign fell far short of its goal, raising only enough money for the remodeling and equipment, and thus leaving the hospital to enter the twenties under a burdensome debt.²

By 1924 the debt had reached nearly \$170,000, and the building was in need of repairs, the rooms of redecorating, and the hospital of patients, the latter having dwindled to an occupancy of approximately one-third its capacity. Into this seemingly hopeless situation came a new superintendent, the Rev. C. C. Beam, a truly dynamic administrator who was destined to mobilize the sympathy and aid of a great many people on behalf of the hospital. Shortly after his appointment he appealed to the Presbyterian women of the community, who under his guidance organized the Presbyterian Hospital Auxiliary and soon raised \$20,000 for repairing and redecorating the hospital. An even more valuable contribution of these women proved to be their many hours of service within the hospital, performing a myriad of useful tasks.

In the same year (1924) the Rev. Mr. Beam guided the hospital through its gravest crisis when the holders of the mortgage threatened to foreclose. Just as the situation began to appear desperate, Mr. Beam

Request for reprints to 310 Westwood Ave., Winston-Salem, N. C. 27103.

managed to persuade J. E. McIlwaine, a member of the hospital's Board of Trustees, to prevail on the Guardian Life Insurance Company of America, which he represented locally, to grant a \$100,000 loan, under the condition that the hospital buy a similar amount of insurance on the lives of the trustees. This loan, together with \$60,000 borrowed from local banks under the personal endorsement of Mr. W. H. Belk, another trustee, averted the almost certain foreclosure. In addition, Mr. Beam secured a promise from the Presbyterian churches of the city that they would pay the interest on the loans and the premiums on the life insurance.² In 1926 the hospital began receiving from the Duke Endowment one dollar per day for charity patients, and with this money and other donations the entire debt was paid off by 1940.

With its financial troubles thus settled the hospital began a period of somewhat tranquil growth and service to the community. In 1935 the School of Nursing took a significant step forward when it became affiliated with Queen's College to allow a girl to receive a B.S. degree in nursing within a period of six years.⁴ Continuing its pattern of growth, the hospital again outgrew its facilities, and in 1938 the Duke Endowment agreed to add fifty cents to every dollar which the hospital could raise for the purpose of erecting a new building.⁵ This time, in a campaign which just managed to avoid being disrupted by another war, the hospital raised \$300,000. This money, together with the Endowment's \$150,000, was used to erect a new and modern facility which opened in August of 1940 with 160 beds and 27 basins. The old building was then renovated for use as a nurses' residence.⁶

The hospital now had the nucleus around which the ensuing 25 years would see built

a large, modern general hospital. The period from 1940 to 1965 for Presbyterian Hospital might aptly be called the period of additions, for there always seemed to be one either in the planning or the building stage during the entire period. The first of these was an additional wing erected in 1946; in 1952 a large part of the hospital was remodeled, and in 1958 two more wings were added, expanding both the number of beds and the service facilities, thus bringing the hospital to a 404-bed capacity plus a 32-bed intensive care unit.⁷

The hospital's growth could easily have stopped here, but as the past has set a pattern for growth, so the future will continue it, as on March 20, 1965, the hospital announced plans for a 2.3 million dollar, eight-story addition, housing an 80-bed progressive care unit and a major expansion of the hospital's laboratory facilities.⁸ At this same time the hospital took another significant step forward when it decided to admit patients and choose staff members and doctors without regard to race.⁸ This sketch, therefore, does not close Presbyterian Hospital's history, but rather leaves it open to the future.

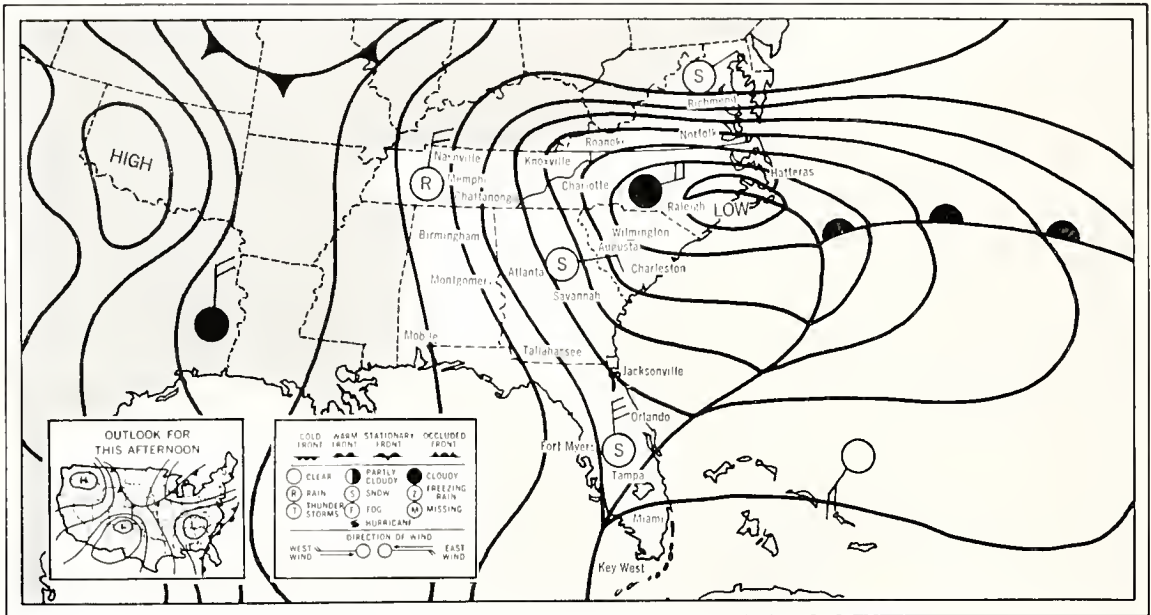
References

1. Strong, Charles M.: *History of Mecklenburg County Medicine*, Charlotte, N. C., News Printing House, 1929, pp 89-44.
2. Beam, C. C.: *History of the Presbyterian Hospital*, *Bulletin of the Mecklenburg County Medical Society*, Charlotte, N. C., Herald Press, 1940, pp 6-10.
3. Blythe, L. and Brockman, C. R.: *Hornet's Nest*, Charlotte, N. C., McNally Press, 1961, p 316.
4. May, M. B.: *Presbyterian Hospital School of Nursing*, *Bulletin of the Mecklenburg County Medical Society*, Charlotte, N. C., Herald Press, Aug. 1940, pp. 19-21.
5. *Charlotte News*, Charlotte, N. C., Sept. 28, 1938, p 1-B.
6. Ovens, D.: *Sidelights of the Campaign*, *Bulletin of the Mecklenburg County Medical Society*, Charlotte, N. C., Herald Press, Aug. 1940, p 18.
7. Rankin, J. W.: *A Metropolitan Community Survey of Mecklenburg County*, N. C., Charlotte, N. C., 1960, p 15.
8. *The Charlotte Observer*, Charlotte, N. C., March 20, 1964, p 1-C.

... the perspiration from a great number of persons pent up together, renders the air unwholesome. The danger from this quarter will be greatly increased, if any one of them happens to have bad lungs, or to be otherwise diseased. Those who sit near him, being forced to breathe the same air, can hardly fail to be infected.—William Buchan: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicine*, etc. Philadelphia, Richard Folwell, 1799, p. 57.

REGIONAL WEATHER FORECAST

Record Low Temperatures and Heavy Rain Followed by Cough, Stuffed and Runny Noses and Aches and Pains.



Tussagesic breaks up coughs, quickly clears stuffed and runny noses and relieves aches and pains. Provide coverage of the tough cold for up to 24 hours with just a single timed-release tablet dosed morning, midafternoon and at bedtime.

each

Tussagesic®

timed-release tablet contains:

Triaminic®	50 mg.
(phenylpropanolamine hydrochloride 25 mg., pheniramine maleate 12.5 mg., pyrilamine maleate 12.5 mg.)	
Dextromethorphan hydrobromide	30 mg.
Terpin hydrate	180 mg.
Acetaminophen	325 mg.

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. **Side effects:** Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. **Precautions:** The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

DORSEY LABORATORIES • a division of The Wander Company • LINCOLN, NEBRASKA

North Carolina Medical Journal

Owned and published by
The Medical Society of the State of North Carolina,
under the direction of its Editorial Board.

Wingate Memory Johnson, M.D.
Founding Editor (1940-1963)

EDITORIAL BOARD

Robert W. Prichard, M.D., Winston-Salem
EDITOR

John S. Rhodes, M.D., Raleigh
ASSOCIATE EDITOR

Miss Louise MacMillan, Winston-Salem
ASSISTANT EDITOR

Mr. James T. Barnes, Raleigh
BUSINESS MANAGER

W. McN. Nicholson, M.D., Durham
CHAIRMAN

Ernest W. Furgurson, M.D., Plymouth

John C. Reece, M.D., Morganton

Robert A. Ross, M.D., Chapel Hill

Charles W. Styron, M.D., Raleigh

Address manuscripts and communications regarding
editorial matter to the

NORTH CAROLINA MEDICAL JOURNAL

300 South Hawthorne Road, Winston-Salem, N. C. 27103

Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 203 Capital Club Building, Raleigh, N. C. 27602. All advertisements are accepted subject to the approval of a screening committee of the State Journal Advertising Bureau, 510 North Dearborn Street, Chicago, Illinois 60610, and-or by a Committee of the Editorial Board of the North Carolina Medical Journal in respect to strictly local advertising accepted for appearance in the North Carolina Medical Journal.

Instructions to authors appear in the January and July issues.

Annual Subscription, \$5.00

Single copies, \$1.00

Publication office, Progress Printing Co., Inc., Box 175, Fuquay-Varina, North Carolina 27526.

MARCH, 1967

NEONATAL SEPSIS

The paper by Sanders and Cramblett in this issue reconfirms the observation that infections occurring at life's extremes are commonly associated with other serious diseases. Prematurity and congenital anomalies complicate or perhaps predispose the neonate to sepsis, whereas diabetes mellitus, alcoholism, and urinary tract obstruction frequently coexist and to some extent mask sepsis in the elderly.

Diagnosis and therapy are a bit more complicated, and involve more variables than the two emphasized in the paper, name-

ly, physician's training and the newer antibiotics. There is good evidence that immunity is sometimes impaired in both the very young and the very old; perhaps the neonate of the future will be given a series of tests which will serve to detect those individuals whose immunologic mechanisms are deficient. The authors, however, perform a valuable service in redirecting our attention to some of the many factors influencing neonatal survival.

Harry M. Carpenter, M.D.

* * *

SOFT WATER AND SOFT HEARTS

For the past several years, since Schroeder published a paper on the subject (JAMA 172: 1902 [Mar 23] 1960), soft water has been suspected of an association with increased mortality from cardiovascular disease. Things have not yet gotten to the point where water taps are required to bear a warning to the effect that water drinking may be hazardous to your health, but epidemiologists have been suitably exercised over the matter. Our own state has both soft and hard water areas, so any prejudice we might have would be strictly at the local opinion level.

One of the latest reports comes from Great Britain, where cardiac disease in Glasgow (very soft water) and London (very hard water) was compared, as seen in medico-legal necropsies of men who had died accidental deaths and men who died suddenly from ischemic heart disease. Without going into details (for them see Crawford and Crawford, Lancet 1: 229 [Feb 4] 1967), the findings suggest that there is increased susceptibility of the myocardium to ischemic changes in the soft water area, and that the mineral content of the coronary arteries is related to the mineral content of the water. Since changes in the myocardium of the sort postulated are much more difficult to demonstrate than coronary atherosclerosis and its complications, it may well be that we have been overlooking an important part of the ischemic heart disease picture these many years. The British study did not turn its attention to the increased mortality as-

sociated with soft water and such diseases as hypertension and stroke, although the authors called attention to this important aspect of the problem.

New mysteries seem to proliferate at a faster rate than new explanations. At least we should benefit by further appreciation that we know very little for sure.

* * *

DR. BUCHAN WORRIES ABOUT AIR— NORTH CAROLINA HELPS OUT

Our regular contributor of fillers, Dr. Buchan, speaking from his 18th century viewpoint, turns his considerable powers on bad air, beginning in this issue of the JOURNAL. This gives us occasion to welcome the beginning encampment of the Environmental Health Center in the Research Triangle area. Dr. Paul Kotin, director of the center, is already on the premises, and his wife is an assistant dean at Duke. People at the National Institutes of Health in Bethesda are still bemoaning the departure of the Kotins, to say nothing of the center itself, which they saw rising in their imagination on the Bethesda grounds until the decision was made to have it in our state.

While there may be nothing new about bad air, or the appreciation by the medical profession of its ill effects, advances toward relief since Dr. Buchan's time have been too few. Noxious substances in the environment, whether its gaseous portion or any other, are prime concerns of the physician, and we cannot help but benefit as a nation, a state, and as individuals from having attention focused on them. As North Carolinians, we can take pride in being host to the Center, and wish it well.

THE HOSPITALS

The February, 1967, *Ladies Home Journal* features an article on U. S. hospitals entitled "America's 10 Best Hospitals," as picked by "A Jury of Experts." An additional 21 runners-up are named, one of them Duke Hospital. On the "jury" was Ray Brown of Duke. The essence of the article's message is that, with few exceptions, only teaching hospitals offer top-notch care, and that readers would be well advised to "make a beeline for the large teaching hospital" when emergency care is not required, which presumably would force many to their community hospital.

There is little surprise in the fact that the *Ladies Home Journal* would publish such an article—the public has a truly vital interest in such matters, and it sells magazines. It is surprising that the distinguished individuals on the "jury" would lend themselves to such a venture. Surely an article which makes such statements as (discussing whether or not big teaching hospitals are impersonal) "Which would you rather have—warm, compassionate care to usher you into the next world, or cool, scientific care to pull you back into this one?" should not bear the imprint of these important people. The Joint Commission has labored long, and continuously, to improve standards of hospital care. It, and many social pressures, have led to better and better community hospitals. The need for shaking public confidence in community hospitals to accelerate their continued improvement remains to be shown; the article will inevitably shake public confidence—the rest is doubtful.

Unwholesome air is a very common cause of diseases. Few are aware of the danger arising from it. People generally pay some attention to what they eat and drink, but seldom regard what goes into the lungs, though the latter often proves more suddenly fatal than the former.—William Buchan, M.D.: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, etc., Philadelphia, Richard Folwell, 1799, p 67.

The President's Message

IS THE PAC MOVEMENT WORTH WHILE?

What is the PAC movement? Has it paid dividends? Has its book value increased? Is there a market? What are the prospects for the future?

The movement known as PAC, or Political Action Committee, is probably only a modern version of similar efforts by sane and thinking men for centuries. It is a means to an end, with the sought-for goal being government of the people by the people. In the course of human events it does become necessary at times to place curbs, checks, and balances upon a freewheeling neophilosophy of government. The balanced man seeks ways and means to do this short of physical rebellion.

Operating within the parameters of our political arena and under our republican form of government, the balanced man utilizes first the democratic process of political education—political education for the people of his environs so that they may gain a more accurate knowledge of the elements of proper government, and so that they, the people, may have an honest audit of governmental progress, aims, and course.

From this beginning political action develops; political action by direct involvement as an individual candidate for office; or by candidate support, active in the councils of the party of his choice; or by passive but highly important action demonstrated by the contribution of funds toward the election of the political candidate or candidates who seem to offer the highest probability of sane and balanced government. We have now defined the PAC movement as one wherein people band themselves loosely together—first for pollution education, and finally for political action.

The American Medical Political Action Committee (AMPAC) is a virile and aggressive movement which has fathered, if you like, the PAC groups in the several states. In North Carolina our own medical political action battalion is known as MEDPAC. Financial support for AMPAC and MEDPAC is on the basis of voluntary contribu-

tions and is thus not a tax-deductible item for physicians. MEDPAC has been guided by a group of men of proven worth and balanced thinking. North Carolina physicians have contributed generously of their time and from their own funds toward the success of this effort. Often it is in the interest of wisdom to avoid going into the minutiae of involvement, of achievement, and support; but it may be said that the stated mission for this past year was accomplished.

Plato said, "The punishment of wise men who refuse to take part in the affairs of government is to live under the government of unwise men." This solid fact has been recognized for centuries; therefore, we citizens, we physicians, our wives, our people must exert our influence and leadership in the domain of politics. Political campaigns have one and only one objective—to win; to win is the name of the game.

How are these campaigns won? By votes. How are votes made? Careful long-term research has demonstrated that votes are influenced greatly by the opinion-makers. The opinion-makers at the local level are those whom the people respect. Mass as opposed to individual creation of opinion unfortunate has become a craft, often devious and with an ulterior motive in view. Currently, there seems to be a studied campaign to destroy public confidence in the hospitals of America, and in particular the community hospitals.

Has PAC paid dividends?

We have just completed an off-year election. The change in the make-up of our Congress and in connection with gubernatorial occupancy was striking. This change was due to the determined effort of reasonable men to put brakes on free spending, uneconomical and possibly sinister leaning and direction of the 89th Congress. How well the 90th Congress takes the message from the people to heart remains to be seen.

This past week in Washington a featured speaker at the Fifth Public Affairs Association Conference, sponsored by the United

States Chamber of Commerce, gave credit to political action groups all over the country for stimulating the people to speak with their ballots. He also paid specific and high tribute to AMPAC as being one of the most effective groups in the area of political education for good and for better government. From the remarks made by many on the national scene, it is obvious that the political awakening of the professional man is being recognized and that his efforts are bearing fruit. When the term *professional man* is used, it does not connote solely the doctor of medicine, but includes all those of the more learned professions. Proof of the impact of AMPAC and other like-minded political action groups has been demonstrated.

The book value of the sound government PAC movements has increased, and there is a continuing opening in the market place for its product. This product, in the main, is an intelligent, accurately informed electorate that has an activist interest in sound, fair, and economical government, controlled by the elected representatives of the people and not by appointed bureaucracies, whose directives are becoming the law of the land.

The mechanics of merchandising another of the products of PAC—direct candidate support—is one that is not well understood. From time to time local partisans cannot understand why funds are not being expended in the area of origin. Often the explanation is simple. For example, if in a given congressional district the two candidates for office are from a practical, philosophical, and nonpartisan standpoint like-thinking individuals, it is impractical to interpose PAC. If PAC enters this campaign it has interfered in a purely party affair, and it is better that the choice be left to the individual PAC member as to where his best interests lie. If either of the two men is elected, the people are assured of the elected's best efforts toward sound government.

On the other hand, where the attitudes and philosophy of two candidates diverge and the position of one is unfavorable, then PAC will become involved. Moreover, there is another point that is often overlooked. If,

in another state, political action treasuries with a political philosophy diametrically opposed to ours are pouring funds into the campaign kitty of a candidate whose thinking is entirely opposite to the desires of the more conservative political action groups, then it behooves other states to take an interest. When this highly liberal candidate is elected, he negates the vote of either of the sound men who were elected from the home district, and in fact defeats the personal purpose of the one who was elected. Therefore, it is in the interest of wisdom to use funds from one state for direct candidate support in another state because the election of any sound legislator at a national level is important to the several states.

The party allegiance of an assisted candidate in this instance is not a primary factor. There are sound men in both parties. The sociopolitical attitude of the individual candidate is of prime import, and if funds from the State of Franklin can help in the defeat of a nonacceptable candidate in the State of Madison, then so be it.

AMPAC-MEDPAC does have a future. We in medicine are aware that some people outside the medical field think that AMPAC on a national level and MEDPACs on a local level are oriented and solely dedicated to the single principle of staving off the *further* socialization of medicine. This, most certainly, is not the primary purpose of any of these organizations. There has been recently an awareness on the part of many, especially in the business community, that our desired end point is sound government directed by balanced men. If this can be achieved, then the specter of total socialization will be relegated to the nether world from which it sprang.

We must remember and constantly be aware of the certain fact that any political education or political action movement or both must be a continuing program, not an effort coming to life only in election years. To this end, and in language of our current youth—"Get out and get with it, Dad—Mom, too."

FRANK W. JONES, M.D.

Committees & Organizations

NORTH CAROLINA STATE BOARD OF HEALTH

VENEREAL DISEASE CONTROL SECTION DIVISION OF EPIDEMIOLOGY

PHYSICIAN BREAKS CHAIN OF INFECTIOUS SYPHILIS

For many years Public Health workers in North Carolina have known that syphilis can never be eradicated in this state without the full support and cooperation of the practicing physicians. A joint survey conducted by the American Medical Association and the American Social Health Association indicated that physicians treat more than three-fourths of all venereal disease in the United States. This being the case, it is of utmost importance that physicians report these cases of venereal disease to the local health department and extend permission for the application of epidemiologic measures to all infectious cases.

Local health departments report that in North Carolina we have the full cooperation of many physicians in the fight against syphilis. One of these physicians in a leading Eastern North Carolina city was instrumental in halting a chain of infectious syphilis recently. The patient, a 24-year-old woman reported to the physician with a generalized rash and an STS titer of 1:32 dilutions. She gave a history of having had a primary chancre some four weeks prior to her visit to the doctor, and indicated that the rash appeared about two weeks after the chancre disappeared.

Immediately after treating the patient for secondary syphilis, the physician called the county health department, reported the case, and requested that the public health representative assigned to that area make an epidemiologic investigation and follow-up of the case. The patient was interviewed that same day, and named three sex contacts. She also named four other persons (suspects) who had been exposed to some of her contacts and should be examined. The three contacts and four suspects were promptly located and assisted in obtaining

an examination by their physicians or at the health department.

As a result of these examinations, one contact was treated for primary syphilis, one for secondary syphilis, and one was found to be free of infection. The contact who was not infected was prophylactically treated by his physician. In addition, one of the four suspects was treated for secondary syphilis. The newly diagnosed patients were interviewed, as in the original case. As a result, one additional person was treated for early syphilis. The original patient was interviewed again and revealed two additional contacts and a suspect. No new infections were identified. The uninfected contacts received prophylactic treatment.

Altogether, this chain of syphilis involved 25 people, 4 of whom were brought to treatment for infectious syphilis. Several of the contacts and suspects lived in counties or cities other than that of the original patient, 3 in other states.

The public health representative kept the physician who reported the original case informed about the epidemiologic aspects of the case, and the physician, realizing that time would not permit him to carry out these measures, was most appreciative of the interviewing and investigative services offered by the local health department. He is aware also of the darkfield examination services available through the local health department, having utilized this service several times in the past.

This physician realized that he had just taken the lead in halting another chain of infectious syphilis. Had he not reported the case and requested that epidemiologic procedures be carried out, this chain of infection would still be growing, spreading from community to community and state to state.

This case demonstrates the effectiveness of venereal disease epidemiology as a joint activity of the physician and the public health representative.

A UNC psychologist, Dr. C. David Jenkins, is developing a personality test which may one day be used to determine your risk of heart attack. The test is based on a five-year study which showed that men who have a "success personality" run a greater risk of heart disease.



for psychiatric treatment

Peachtree Hospital, located in Atlanta, Georgia, is a complete psychiatric, alcoholic and drug addiction treatment facility accredited by the Joint Commission on Accreditation of Hospitals. The hospital has 65 beds, 47 of which are devoted to the care of psychiatric patients

and 18 of which, in a separate area, are for patients with acute cases of chronic alcoholism or drug addiction. Treatment procedures include psychotherapy, electroconvulsive shock therapy, subinsulin coma and chemotherapy. *We will be pleased to provide further information upon request.*

ACCREDITED BY THE JOINT COMMISSION ON ACCREDITATION OF HOSPITALS

peachtree hospital

41 PEACHTREE PLACE, N. E. / TELEPHONE 873-5681 / ATLANTA 9, GEORGIA

Rx

... for a
healthy
**CREDIT
POLICY**

IF you are a physician, dentist, hospital administrator or clinic manager—

AND if you find yourself over-burdened with credit and collection problems—

THEN you're ready for a professional consultation. Whether you were trained to treat patients, run a hospital or manage a clinic, regular consultations with specialists in fields other than your own are probably a part of your routine.

If you haven't already done so, the professionally-trained specialist you should consult is your local Medical Credits representative. For his name and address, write:

Associated Credit Bureaus of N. C.

P. O. Box
300



Greensboro,
North Carolina

PROGRAM

Preliminary PROGRAM

One Hundred Thirteenth Annual Session The Medical Society of the State of North Carolina

Headquarters: THE CAROLINA
Pinehurst, North Carolina

Saturday, May 20, 1967

9:00 a.m.

Executive Council Meeting
(Business of this Session may be continued Sunday
morning at 10 o'clock)
(Crystal Room—The Carolina)

10:00 a.m.

Registration Desk opens, Booth
(Front Lobby)
(Society Members, Delegates, Officials, Auxiliary,
Technical and Scientific Exhibitors and Guests will
register in this Area.)
(Registration closes at 5:00 p.m.)
* * *

Sunday, May 21, 1967

10:00 a.m.

General Registration opens, Booth
(Front Lobby)
(Society Members, Delegates, Officials, Auxiliary,
Technical and Scientific Exhibitors and Guests will
register in this Area.)

2:00 p.m.

First Meeting of the Annual Meeting
THE HOUSE OF DELEGATES of the Medical Society
Donald B. Koonce, M.D., Speaker, presiding



Donald B. Koonce, M.D.

Invocation:
Welcome:
Memorial Service: Charles H. Pugh, M.D., Chairman,
presiding
Business:
(Agenda will be available)
(Cardinal Ballroom—The Carolina)

5:00 p.m.

Registration Desk closes

5:30 p.m.

Social Hour and Dinner—Yale University Medical
Alumni
(North Carolina Country Club)
(Mark McD. Lindsey, M.D., Hamlet, in charge)

6:00 p.m.

House of Delegates recesses to Monday, May 22, 1967
(If business of First Meeting is not concluded)
* * *

Monday, May 22, 1967

8:30 a.m.

Scientific and Technical Exhibits open
(Exhibition Hall)

8:30 a.m.

General Registration opens, Booth—(Front Lobby)
(Society Members, Delegates, Officials, Auxiliary,
Guests, Technical and Scientific Exhibitors will regis-
ter in this Area.)

9:00 a.m.

NORTH CAROLINA BOARD OF MEDICAL EX-
AMINERS
(Meet for Business and Hearings)
(Camellia Room)

POSTGRADUATE AND AUDIO-VISUAL PROGRAM

John C. Grier, Jr., M.D., Chairman, Pinehurst
Morning Session—(Azalea Room—The Carolina)
Moderator: William H. Burch, M.D., Lake Lure

9:00 a.m.

KARL MENINGER LOOKS AT PSYCHIATRIC HIS-
TORY
Milestones of psychiatry through the ages. Crude treat-
ments of the past. How psychiatry has changed with
the evolution and revolution of man's social concepts.

9:25 a.m.

TRANSVAGINAL REGIONAL ANESTHESIA IN OBSTETRICS

Transmission routes of pain impulses. Paracervical and pudendal nerve block to provide relief. Delivery of identical twins. Of value to anesthesiologist, general practitioners, gynecologists, obstetricians, general surgeons, urologists.

9:55 a.m.

READY FOR EDNA

The broad range of services needed to meet the health needs of the aged. Edna is symbolic of increasing numbers of aged in communities throughout the nation. Is your community ready for Edna?

10:30 a.m.

HUMAN KIDNEY TRANSPLANTATION

Preoperative preparation of the donor and recipient, the establishment of genetic identity, and the criteria for operation on both patients. Operative technique. The return to normal function following operation.

11:00 a.m.

EDUCATION: SPRINGBOARD OF SPACE

Need for educated people in the space program. How astronomy, chemistry, physics, mathematics, engineering, medicine, and other academic areas will pioneer the way to creativity and comprehension in conquering the unknown. How this knowledge is applied to research.

FIRST GENERAL SESSION**Monday, May 22, 1967**

(Cardinal Ballroom)

8:30 a.m.

Convene Session

Frank W. Jones, M.D., President

Invocation:

8:30 a.m.

IS THE INCIDENCE OF PULMONARY TUBERCULOSIS INCREASING?

Henry S. Willis, M.D., Chapel Hill



Henry S. Willis, M.D.

9:00 a.m.

SYMPOSIUM ON SEX AND RELATED PROBLEMS

MODERATOR: Amos N. Johnson, M.D., Garland

SEXUAL PROBLEMS IN ADOLESCENCE

J. Roswell Gallagher, M.D., Chief, The Adolescents' Unit, The Children's Hospital Medical Center, Boston



J. Roswell Gallagher, M.D.

SEXUAL DEVIATION IN RELATION TO MEDICAL PRACTICE

Wardell B. Pomeroy, Ph.D., New York



Wardell B. Pomeroy, Ph.D.

MODERN CONTRACEPTION

C. Donald Christian, M.D., Associate Professor Obstetrics and Gynecology, Duke University Medical Center, Durham



C. Donald Christian, M.D.

10:30 a.m.

PANEL DISCUSSION: SEX AND RELATED PROBLEMS

Moderator: Amos N. Johnson, M.D., Garland

Panelists: J. Roswell Gallagher, M.D.; Wardell B. Pomeroy, Ph.D.; C. Donald Christian, M.D.

(QUESTIONS from Audience with ANSWERS by the Panel)

11:00 a.m.

Coffee Break

11:15 a.m.

THE ECONOMICS OF MEDICAL PRACTICE
Bernard D. Hirsh, LL.B., Director
Law Department
American Medical Association, Chicago, Illinois



Bernard D. Hirsh, LL.B.

11:45 a.m.

THE CONQUEST OF INNER SPACE
Address: Milford O. Rouse, M.D., President-Elect



Milford O. Rouse, M.D.

AMERICAN MEDICAL ASSOCIATION
Announcements
ADJOURNMENT

* * *

ALUMNI LUNCHEONS

Monday, May 22, 1967 - 1:00 P.M.

University of Virginia Medical Alumni Luncheon
(North Carolina Country Club)
(See Mr. William Booth, Executive Secretary—Registration Area for information)
Duke University Medical Alumni
Talmadge L. Peele, M.D., Secretary, Durham
(Pinehurst Country Club)
North Carolina Society of Internal Medicine
E. Thomas Marshburn, M.D., Secretary, Wilmington
(Crystal Room—The Carolina)

2:00 p.m.

HOUSE OF DELEGATES of the Medical Society reconvenes
(If business not concluded on Sunday, May 21, 1967)
(Cardinal Ballroom—The Carolina)

POSTGRADUATE AUDIO-VISUAL PROGRAM

2:00 p.m.

John C. Grier, Jr., M.D., Chairman, Pinehurst
(Afternoon Session—Azalea Room)
MODERATOR: Paul McBee Abernethy, M.D., Burlington

2:00 p.m.

THE MEASUREMENT OF DEPRESSION
The development, validation, and use of a scale for the quantitative measurement of depression. It lends itself to the general practice of medicine where most depressions are first encountered.

2:25 p.m.

CHRONIC BRONCHITIS AND PULMONARY EMPHYSEMA
The rehabilitation of patients with advanced chronic bronchitis and pulmonary emphysema. The physiology and pathology. Equipment and diagnostic techniques used in the management of the patient.

3:00 p.m.

DRUG ADDICTION: A MEDICAL HAZARD
Drug addiction—as much of an occupational hazard to the medical profession as certain accidents are to various other occupations. The danger associated with the misuse of opiates and synthetic narcotics. Presented to aid medical personnel to recognize both the evil and the good inherent in all narcotic drugs.

3:30 p.m.

SOMEONE YOU CAN TRUST—SOMEONE YOU CAN BE
A film designed to help doctors in their efforts to recruit students to enter the field of medicine. A health career film. Explains how a student can become a doctor.

3:55 p.m.

APOLLO LUNAR MISSION PROFILE
The thrust needed to power man toward the moon. Three Apollo spacecraft modules. Launch facilities and Mission Control Center. Lunar mission profile is portrayed in animation with launch, earth parking orbit, lunar trajectory, mid-course corrections, lunar explorations, earth trajectory, re-entry and parachute deployment.

* * *

SECTION ON INTERNAL MEDICINE

Monday, May 22, 1967 - 2:30 P.M.

Barry F. Hawkins, M.D., Chairman, Concord

2:30 p.m.

CURRENT STATUS OF CARDIOVERSION
George V. Irons, M.D., Charlotte

2:55 p.m.

DRUG THERAPY OF CARDIAC ARRHYTHMIAS

Andrew G. Wallace, M.D., Assistant Professor of Medicine, Duke University Medical Center, Durham

3:20 p.m.

Question and Answer period

3:30 p.m.

AUTOIMMUNE DISTURBANCES, THEIR SIGNIFICANCE AND MANAGEMENT

Donald M. Hayes, M.D., Associate Professor of Medicine, Bowman Gray, Winston-Salem

3:55 p.m.

ON LSD

Martin H. Keller, M.D., Associate Professor of Psychiatry, UNC, Chapel Hill

4:20 p.m.

Question and Answer period

* * *

SECTION ON SURGERY

and

SECTION ON ORTHOPAEDICS AND TRAUMATOLOGY**Monday, May 22, 1967 - 2:30 P.M.**

Patrick F. Clark, M.D., Chairman—(Surgery)

J. Frank Hamilton, M.D., Chairman—(Orthopaedics & Traumatology)

SECTION ON OBSTETRICS AND GYNECOLOGY**Monday, May 22, 1967 - 2:30 P.M.**

John H. Monroe, M.D., Chairman, Winston-Salem

OBSTETRIC EMERGENCIES:**MATERNAL DEATHS FROM ANESTHESIA IN NORTH CAROLINA—1964-1965**

Stephen Anderson, M.D., Winston-Salem

SEPTIC ABORTION

Robert Brame, M.D., Chapel Hill

PREMATURE SEPARATION OF THE NORMALLY IMPLANTED PLACENTA

Carlyle Crenshaw, M.D., Department of Ob-Gyn, Duke University Medical Center, Durham

Intermission 3:45 to 4:00 p.m.

PANEL DISCUSSION: OBSTETRIC EMERGENCIES

Moderator: William A. Peters, M.D., Elizabeth City

Panelists: Stephen Anderson, M.D.

Robert Brame, M.D.

Carlyle Crenshaw, M.D.

(Written questions from the floor)

SECTION ON NEUROLOGY AND PSYCHIATRY**Monday, May 22, 1967 - 2:30 P.M.**

Robert N. Harper, M.D., Chairman, Raleigh

PUBLIC MORALITY AND THE LAW

Moderator: Robert N. Harper, M.D., Raleigh

Panelists: Eugene A. Hargrove, M.D., Commissioner, Dept. of Mental Health, Raleigh

Hans Lowenbach, M.D., Prof. of Psychiatry, Duke University, Durham

Mr. V. Lee Bounds, Director, N. C. Prison Dept., Raleigh

Judge Mason Thomas, Institute of Government, Chapel Hill

* * *

SECTION ON RADIOLOGY**Monday, May 22, 1967 - 2:30 P.M.**

Leslie M. Morris, M.D., Chairman, Gastonia

THE ROLE OF NEPHROTOMOGRAPHY IN RENAL DISEASE

John A. Evans, M.D., Dept. of Radiology, The New York Hospital, Cornell Medical Center, New York

RENAL ARTERIOGRAPHY

Richard G. Lester, M.D., and Irvin S. Johnsrude, M.D., Department of Radiology, Duke University Medical Center, Durham

ARTERIOGRAPHY IN THE DIAGNOSIS OF URINARY BLADDER TUMORS

Joseph E. Whitley, M.D.; S. Lacey, M.D.; Clair E. Cox, M.D.,

Departments of Radiology and Urology, Bowman Gray, Winston-Salem

Business Meeting: North Carolina Chapter, American College of Radiology

* * *

SECTION ON PATHOLOGY**Monday, May 22, 1967 - 2:30 P.M.**

A. Wendell Musser, M.D., Chairman, Durham

2:30-2:45 p.m.

MODERN MORPHOLOGY OF EMPHYSEMA

Philip C. Pratt, M.D., Associate Professor of Pathology, VA Hospital, Durham

2:45-2:55 p.m.

COLORIMETRIC ANALYSIS OF BLOOD AMMONIA

Michael Leakan, M.D., Resident in Pathology, Duke University, Durham

2:55-3:05 p.m.

**NON-FERMENTATIVE GRAM NEGATIVE BACILLI
OF MEDICAL IMPORTANCE**Charles Mauney, Ph.D., Clinical Microbiologist, VA
Hospital and Duke Hospital, Durham

3:05-3:15 p.m.

**IDENTIFICATION OF FUNGI IN CYTOLOGICAL
PREPARATION**Bruce Schlein, M.D., Resident in Pathology, Duke Uni-
versity, Durham

3:15-3:30 p.m.

**LABORATORY DIAGNOSIS OF PSEUDOMONAS
PSEUDOMALLEI**Ron Rhatigan, M.D., Laboratory Service, Womack
Army Hospital, Fort Bragg, N. C.

3:30-5:00 p.m.

BUSINESS MEETING

* * *

**SECTION ON STUDENT AMA CHAPTERS
IN NORTH CAROLINA****Monday, May 22, 1967 - 2:30 P.M.**

Joel E. Rothermel, Chairman, Chapel Hill

**PANEL DISCUSSION: STUDENT CRITICISM OF
MEDICAL EDUCATION**Moderator: Edgar T. Beddingfield, Jr., M.D., Stan-
tonsburgPanel: Bowman Gray Medical Student, Duke Medical
Student, UNC Medical Student**STUDENT PAPER COMPETITION**Presentation of original papers by medical students
from Bowman Gray, Duke and University of North
Carolina. A cash award is given for the one judged
most outstanding.JUDGES: Bryant L. Galusha, M.D., Charlotte; Roscoe
D. McMillan, M.D., Red Springs; John C. Reece,
M.D., Morganton

5:00 p.m.

Registration booth closes.

5:00 p.m.

Exhibits close, (Scientific and Technical)
(Exhibits under supervision of official watchmen)

5:00 p.m.

House of Delegates adjourns Annual Meeting
(If did not adjourn on Sunday, May 21, 1967)

5:30 p.m.

SOCIAL HOUR for Scientific and Technical Exhibitors
By: Medical Society
(Pinehurst Country Club)
(Admission by Ticket and Badge)

6:30 p.m.

SOCIAL HOUR—Medical College of Virginia Alumni
(Crystal Room—The Carolina)

7:00 p.m.

DINNER—Medical College of Virginia Alumni
(Crystal Room—The Carolina)

* * *

**SECTION ON STUDENT AMA CHAPTERS
DINNER****Monday, May 22, 1967 - 7:00 P.M.**

(North End—Main Dining Room)

SOCIAL HOUR

Dinner Meeting:

Invocation:

Introduction of Guests: Joel E. Rothermel, Chairman

Award for Outstanding Student Paper

ADDRESS: Hubert McN. Poteat, Jr., M.D., Smithfield

Tuesday, May 23, 1967

8:30 a.m.

REGISTRATION opens, Booth
(Front Lobby)

8:30 a.m.

Scientific and Technical Exhibits Open
(Exhibition Hall—The Carolina)**POSTGRADUATE AND AUDIO-VISUAL
PROGRAM**

9:00 a.m.

John C. Grier, Jr., M.D., Chairman, Pinehurst
(Azalea Room—The Carolina)

Morning Session:

MODERATOR: James G. Jones, M.D., Jacksonville

9:00 a.m.

ADRENALECTOMY FOR ADRENOCORTICAL DIS-
ORDERS

The chemical and clinical course. Removal of the adrenal gland. Gross and microscopic changes in the adrenal cortex. Detailed anatomic description. The biochemical changes are rather complex and are described.

9:35 a.m.

VERTICAL FRONTIER

Medical problems that may be expected to arise when man travels in outer space. The problems of atmospheric survival, including protection from radiation and the complications produced by isolation.

10:05 a.m.

WHAT HAPPENS NEXT

Code 4 Alert. The need and mechanism for having an emergency team available at all times in the hospital for cases of cardiac arrest.

10:25 a.m.

THE CRITICAL DECADES

Ways to influence attitudes of middle-aged patients toward medicine in general and preventive medicine in particular. The importance of developing healthful patterns of living that will stand them in good stead in later years. Educate and motivate patients toward a positive health program.

10:55 a.m.

FERTILITY CONTROL: THE ROLE OF ORAL CONTRACEPTIVES

Ovulation control. A CINE Golden Eagle Award film.

11:20 a.m.

GEMINI VIII

Historical docking of Agena to the Gemini VIII Spacecraft, followed by the wild gyrations, unlatching and unlocking of the two spacecrafts and the excessive roll rate of Gemini VIII. The contingency recovery forces recovering the Astronauts.

SECOND GENERAL SESSION

Tuesday, May 23, 1967

(Cardinal Ballroom—The Carolina)

8:30 a.m.

Film

9:00 a.m.

Convene Session

Frank W. Jones, M.D., President

SYMPOSIUM ON RENAL DISEASE

MODERATOR: Louis G. Welt, M.D., Professor and Chairman

Department of Medicine, University of North Carolina, School of Medicine, Chapel Hill



Louis G. Welt, M.D.

EVALUATION OF RENAL DISEASE

John H. Felts, M.D., Associate Professor of Medicine, Bowman Gray School of Medicine, Winston-Salem



John H. Felts, M.D.

MANAGEMENT OF CHRONIC RENAL INSUFFICIENCY

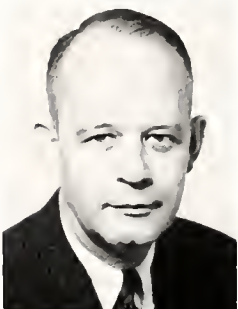
Roscoe R. Robinson, M.D., Associate Professor of Medicine, Duke University Medical Center, Durham



Roscoe R. Robinson, M.D.

THE ROLE OF DIALYSIS IN RENAL DISEASE

William B. Blythe, M.D., Associate Professor of Medicine, UNC School of Medicine, Chapel Hill



William B. Blythe, M.D.

THE CURRENT STATUS OF KIDNEY TRANSPLANTATION

Delford L. Stickel, M.D., Associate Professor of Surgery, Duke University Medical Center, Durham.



Delford L. Stickel, M.D.

11:00 a.m.

Coffee Break

11:15 a.m.

Panel Discussion: RENAL DISEASE

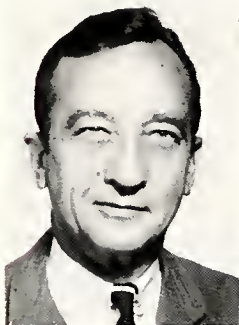
(Questions from Audience with Answers by the Panel)

PANELISTS: Louis G. Welt, M.D.; John H. Felts, M.D., Roscoe R. Robinson, M.D.; William B. Blythe, M.D.; Delford L. Stickel, M.D.

12:00 Noon

Annual Address of the President

Frank W. Jones, M.D., Newton



Frank W. Jones, M.D.

Announcements

ADJOURNMENT

* * *

ALUMNI LUNCHEONS

Tuesday, May 23, 1967 - 1:00 P.M.

Wake Forest College—Bowman Gray Medical Alumni Association

Miss Katherine Davis, Secretary
(North Carolina Country Club)

University of North Carolina Medical Alumni Association

(Main Dining Room—North End—The Carolina)

North Carolina Pediatric Society

(Crystal Room—The Carolina)

Medical Advisory Board—North Carolina Commission for the Blind—Business Meeting

N. C. Academy of Preventive Medicine

POSTGRADUATE AND AUDIO-VISUAL PROGRAM

2:00 p.m.

John C. Grier, Jr., M.D., Chairman, Pinehurst

(Azalea Room—The Carolina)

MODERATOR: William W. Shingleton, M.D., Durham
Afternoon Session:

2:00 p.m.

MYOCARDIAL RE-VASCULARIZATION

The Vineberg implant. Includes surgery in implanting the internal mammary artery into the ischemic myocardium. Arteriography. The indications and contraindications for this procedure.

2:30 p.m.

VISCERAL ORGAN TRANSPLANTS

Explains and shows the procedure for organ transplants. Involves two complete surgical procedures.

3:00 p.m.

JUST FOUR MINUTES

What can be done with a patient with cardiac arrest by a planned program of action. Duties of doctors and nurses and other personnel. Illustration of the mechanisms involved in cessation of heart beat. Mechanism reversed by cardiac massage, electrical pacemaker stimulation and electrical and chemical defibrillation. Simple techniques which may be life-saving when elaborate resuscitation equipment is not available.

3:25 p.m.

DISINFECTION OF THE SKIN

A confusing and controversial problem in most hospitals. The ecology of bacteria of the skin and where bacteria live in the skin. How germicides act to rid the skin of both transient and resident flora. Sources of bacterial contamination in the hospital. The action of various kinds of skin disinfectants. Healthy skin is not a bacterial hazard to asepsis.

3:55 p.m.

RETURNS FROM SPACE

The effects the aerospace industry is having on our daily lives. Useful technology in many fields including dehydrated foods, laser tunnel boring, refrigeration. In medicine displays the uses of sight switch, advanced research for an artificial heart, clinical studies of pulmonary emphysema, and the development of the miniscope.

SECOND MEETING OF THE HOUSE OF DELEGATES

Tuesday, May 23, 1967 - 2:30 P.M.

(Cardinal Ballroom—The Carolina)
(Agenda will be Available)

* * *

SECTION ON GENERAL PRACTICE OF MEDICINE

Tuesday, May 23, 1967 - 2:30 P.M.

John K. Williford, M.D., Chairman, Lillington

ASPECTS OF CARDIOVASCULAR MEDICINE IN THE AGED

Robert F. Klein, M.D., Assistant Professor
Department of Obstetrics & Gynecology
Duke University Medical Center, Durham

HORMONAL CHANGES AND THERAPY

C. Donald Christian, M.D., Associate Professor
Department of Obstetrics & Gynecology
Duke University Medical Center, Durham

ASPECTS OF PSYCHIATRIC CARE OF THE AGED

James Elmore, Jr., M.D., Instructor
Department of Psychiatry
Duke University Medical Center, Durham

* * *

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

Tuesday, May 23, 1967 - 2:30 P.M.

Richard B. Rankin, Jr., M.D., Chairman, Concord

HEADACHES

VASCULAR

John W. Foust, M.D., Charlotte

FACIAL NERVE

Patrick D. Kenan, M.D., Durham

EAR

William B. Alsup, Jr., M.D., Winston-Salem

GLAUCOMA

Richard G. Weaver, M.D., Winston-Salem

REFRACTIVE ERRORS

Thomas G. Kiffney, M.D., Chapel Hill

DISCUSSION—QUESTIONS

OCULAR COMPLICATIONS OF PHENOTHIAZINE DERIVATIVE THERAPY

Albin W. Johnson, M.D., Raleigh

BUSINESS MEETING

SECTION ON PEDIATRICS and SECTION ON PUBLIC HEALTH AND EDUCATION

Tuesday, May 23, 1967 - 2:30 P.M.

William J. DeMaria, M.D., Chairman, Durham—
(Pediatrics)

Sarah T. Morrow, M.D., Chairman, Greensboro —
(PH&E)

2:30 p.m.

EXPERIENCE WITH A METABOLIC SCREENING PROGRAM (PKU)

Ted Scurletis, M.D., Acting Director, Division of Per-
sonal Health, N. C. State Board of Health, Raleigh

3:00 p.m.

ALCOHOL & YOUTH: RECENT RESEARCH

George Maddox, Ph.D., Professor of Sociology and
Anthropology, Duke University, Durham

3:30 p.m.

Interim

3:45 p.m.

MAJOR ETIOLOGICAL CONCEPTS OF ACCIDENT CAUSATION AND PREVENTION

Charles M. Cameron, Jr., M.D., Professor, Public
Health Administration, UNC School of Public Health,
Chapel Hill

4:15 p.m.

DRUG ABUSE IN ADOLESCENTS: IMPLICATIONS AND TREATMENT

John B. Reckless, M.D., Assistant Professor of Psy-
chiatry, Duke University Medical Center, Durham

* * *

SECTION ON ANESTHESIOLOGY

Tuesday, May 23, 1967 - 2:30 P.M.

Thomas H. Collawn, M.D., Chairman, Charlotte

2:30 p.m.

THE DIGITAL PULSE DURING ANESTHESIA

David A. Davis, M.D., N. C. Memorial Hospital, Chapel
Hill

3:00 p.m.

TEMPERATURE REGULATION AND ANESTHESIA

Elisabeth J. Fox, M.D., Winston-Salem and John W.
Fox, M.D., Winston-Salem

3:30 p.m.

A COMPARISON OF THE CARDIO-RESPIRATORY EFFECTS OF HALOTHANE, METHOXYFLURANE, AND FLUROXENE

Kenneth Sugioka, M.D., N. C. Memorial Hospital, Chapel Hill

* * *

5:00 p.m.

Registration closes.

5:00 p.m.

Exhibits close

5:00 p.m.

Audio-Visual Program closes

* * *

PRESIDENT'S DINNER

Tuesday, May 23, 1967 - 7:00 P.M.

(Main Dining Room—The Carolina)

7:00 p.m.

BANQUET

TOASTMASTER:

Invocation:

7:30 p.m.

Presentation of Guests

7:40 p.m.

Presentation of President's Jewel:

7:50 p.m.

Installation of President-Elect Robert A. Ross, M.D.

Administration of Authorized Oath of Office

An Address in Acceptance: Robert A. Ross, M.D.,

President, Chapel Hill



Robert A. Ross, M.D.
President

8:15 p.m.

Recognition of FIFTY-YEAR CLUB and presentation of Fifty-Year Club Pins and Certificates

8:30 p.m.

Banquet Entertainment

10:00 p.m.-2:00 a.m.

PRESIDENT'S BALL

(Cardinal Ballroom—The Carolina)

Music By: Skeets Morris and Orchestra

* * *

Wednesday, May 24, 1967

9:00 a.m.

Registration Desk opens, Booth
(Front Lobby—The Carolina)

9:00 a.m.

Scientific and Technical Exhibits Open
(Exhibition Hall—The Carolina)

* * *

THIRD GENERAL SESSION

Wednesday, May 24, 1967

(Cardinal Ballroom—The Carolina)

8:30 p.m.

Film

9:00 a.m.

CONJOINT SESSION

North Carolina State Board of Health and Medical
Society of the State of North Carolina

Lenox D. Baker, M.D., President, Durham

Jacob Koomen, M.D., State Health Director, reporting.

9:30 a.m.

Presentation of Awards:

Recognition and Presentation of: Moore County, Wake
County and Gaston County Awardees

Lester A. Crowell, Jr., M.D., Chairman, Committee on
Awards

Presentation of Aesculapius Award

Robert E. Miller, M.D., Chairman, Committee on Scientific Exhibits

Presentation of AMA-ERF Checks to:

Duke, UNC and Bowman Gray Medical Schools

Harry B. Underwood, M.D., Chairman, Committee on
AMA-ERF

9:45 a.m.

Coffee Break

10:00 a.m.

PANEL DISCUSSION: REGIONAL MEDICAL PROGRAMS

Moderator: Frank W. Jones, M.D.

Panel: William G. Anylan, M.D., Dean, Duke University Medical School, Durham



William G. Anylan, M.D.

Marc J. Musser, M.D., Director, North Carolina Regional Medical Program, Durham



Marc J. Musser, M.D.

11:15 a.m.

ELECTIONS:
North Carolina Medical Journal—Editorial Board
2-4-year terms

11:25 a.m.

Installation of Officers—1967 House of Delegates
Frank W. Jones, M.D., presiding

11:30 a.m.

Remarks by President Robert A. Ross, M.D.

12:00 Noon

Exhibits close
Registration Desk closes

12:30 p.m.

Presentation of Prizes

ADJOURN SINE DIE

Manson Meads, M.D., Dean, Bowman Gray School of Medicine, Winston-Salem



Manson Meads, M.D.

Isaac M. Taylor, M.D., Dean, UNC School of Medicine Chapel Hill



Isaac M. Taylor, M.D.

Medical Office FOR RENT

Medical Center Building
86 Victoria Road
Asheville, North Carolina

Large nine room suite, including reception room. Contains 1356 square feet. One room leaded for radiological treatment, eight rooms adaptable for examination or treatment purposes. Central location: convenient to St. Joseph's and Memorial Mission Hospitals. Contact: W. T. Duckworth Company, 606 Northwestern Bank Building, Asheville, N. C.

Correspondence

NAVY MEDICAL CORPS

To the Editor:

It should be brought to the attention of North Carolina doctors that there is some very interesting and rewarding active duty in the Navy Medical Corps. It should be of particular interest to those who have matured somewhat by the experience of a couple of years or so of private practice, but who still have some obligated service in the Armed Forces.

The duty of which I speak is with the Task Force of the Navy that is supporting the scientific programs of the United States in Antarctica. Here is an opportunity to serve your country in an important slot while you, yourself, are experiencing some of the most wonderful sights and events and personalities on this planet.

It is a frontier, the last frontier, but one that is studded with some extremely sophisticated researchers. But you can park your family in Christ Church, New Zealand, that is only a few hours away from the frontier. And they may never want to leave Christ Church, as lovely as it is.

If you think you might be able to pass the special physical requirements tests, and possess the qualities of leadership that are of prime importance, address an inquiry to the Bureau of Medicine and Surgery, Department of the Navy, Washington, D. C.

H. E. HINMAN
Captain, MC USNR-R

Child Psychiatry Program at U.N.C.

The Child Psychiatry Unit at the University of North Carolina Memorial Hospital is developing a new research and treatment project with young psychotic children under four years of age. Special treatment and training methods are demonstrated and taught to the parents of such children. To be eligible for the project the child must be under four years of age, have a psychiatric diagnosis within the area of childhood psychosis, and parents who are willing and able to participate in our program. Please send referral material or call Dr. Eric Schopler, Project Director or Dr. Jorge Ferriz, Co-Director.

Bulletin Board

COMING MEETINGS

Duke University Medical Center, Ophthalmology Lecture Series—Durham, April 4, 11, 18, 25.

"Factors in the Genesis of Coronary Artery Disease"—Veterans Administration Hospital, Fayetteville, April 5.

Postgraduate Course in Obstetrics and Pediatrics—Bowman Gray School of Medicine, Winston-Salem, April 11-13.

Second Annual Postgraduate Symposium: "Modern Management of Thyroid Disease"—Wilson Memorial Hospital, Wilson, April 11.

University of North Carolina School of Medicine, Medical Alumni Day—Chapel Hill, April 20.

North Carolina Tuberculosis Association, Annual Meeting—Blockade Runner, Wrightsville Beach, April 20-21.

North Carolina Heart Association, Annual Meeting—Jack Tar Hotel, Durham, May 17-18.

Medical Society of the State of North Carolina, 113th Annual Session—Pinehurst, May 20-24.

University of North Carolina School of Medicine, Symposium on Medicine and Religion—Chapel Hill, June 11-13.

Tri-State Medical Association, Annual Meeting—Nags Head, June 12-14.

Mountain Top Medical Assembly, 14th Annual Meeting—Waynesville, June 15-17.

Sixth Annual Southwide Lawyers and Physicians Conference—Lake Junaluska, August 9-13.

NEWS NOTES FROM THE

DUKE UNIVERSITY MEDICAL CENTER

One of the most distinguished awards in clinical pharmacology has been given Duke University School of Medicine.

The \$100,000 award was made by the Burroughs Wellcome Fund to Duke and Dr. Rubin Bressler, who holds professorships in both medicine and pharmacology at Duke.

Announcement of the award was made in Tuckahoe, N. Y., by W. N. Creasy, president of the Burroughs Wellcome Fund. The award was established in 1959 to "stimulate both research and training in clinical pharmacology," said Creasy.

The fund also selected Tufts University School of Medicine and Dr. Hershel Jick for a similar \$100,000 award. As winners, Dr. Bressler and Dr. Jick become known as 1967 Burroughs Wellcome Scholars in Clinical Pharmacology.

Last July Dr. Bressler was appointed director of clinical pharmacology at Duke University Medical Center. The division is jointly sponsored by the Department of Medicine, under Dr. E. A. Stead, and the Department of Physiology and Pharmacology under Dr. D. C. Tosteson.

In an effort to train more clinical pharmacologists the new curriculum at Duke School of Medicine has

introduced an 80-hour formal introduction to the field. This is taught at a time when students are being introduced to ward work in clinical medicine or physical diagnosis.

And during the past four years, several trainees have been engaged in laboratory and clinical research work under Dr. Bressler's direction.

* * *

The two-compartment hyperbaric chamber which has been in use at Duke University Medical Center since March, 1963, will soon be turned over for the exclusive use of the United States Public Health Service's proposed environmental health center at the nearby Research Triangle.

After several years of putting hyperbaric medicine to the test, a highly skilled team of doctors and technicians at Duke will soon be moving into one of the most sophisticated hyperbaric facilities ever constructed.

Built at a cost of almost \$600,000, the new chamber complex is expected to be ready for operation about July. It will have six compartments, all capable of being operated at different pressure levels at the same time, thus permitting treatment or experimental work to be carried out simultaneously.

One of the six compartments is aptly called a "Wet Pot." In this special cylinder designed to function when filled with liquid, underwater experiments will be conducted.

Special competence beyond that ordinarily found in a medical center will be necessary to operate a sophisticated complex such as this efficiently and safely," said Dr. Herbert A. Saltzman, associate professor of medicine and director of the unit.

For this reason, personnel of diverse talents and experience, including former U. S. Navy divers, will be needed to staff the unit.

* * *

Dr. David C. Sabiston, Jr., professor and chairman of the Department of Surgery at Duke University Medical Center, has been named president of the Society for University Surgeons.

Dr. Sabiston was elected to the post at the annual meeting of the society in Toronto, Canada.

A native of Onslow County, North Carolina, Dr. Sabiston came to Duke as professor and department chairman in 1964 from the Johns Hopkins University School of Medicine, where he was professor and surgeon-in-charge of the Children's Medical and Surgical Center at Johns Hopkins Hospital.

He received a B. S. degree from the University of North Carolina in 1943 and his M.D. degree from Johns Hopkins in 1947. Later he was Harvey Cushing Fellow and an instructor in surgery at Johns Hopkins School of Medicine and then resident surgeon at the hospital.

From 1953 until 1955 he was a captain in the U. S. Army Medical Corps and from 1955 until 1961 he was a clinical investigator at Howard Hughes Medical Institute.

An internationally known surgeon, Dr. Sabiston has delivered lectures in Great Britain, Ireland, Sweden,

Germany, and Spain. He is a member of three national committees—the surgical study section of the National Institutes of Health, the cardiovascular surgery section of the American Heart Association, and the Fulbright Scholarships section of The State Department.

* * *

Dr. E. W. Busse, professor and chairman of the Department of Psychiatry at Duke University Medical Center, has been appointed to two national councils.

One of the appointments, made by Surgeon General William H. Stewart for a four-year term, is on the United States Public Health Service's National Advisory Child Health and Human Development Council.

The other, a two-year term, is on the Professional Advisory Council of the National Association for Mental Health, Inc.

Members of the surgeon general's group are selected from the leaders in the fields of fundamental sciences, medical sciences, education, and public affairs.

As a member of the mental health group, Dr. Busse will be one of several advisors to the association's various citizens' organizations in all professional matters and in various programs.

Dr. Busse is the J. P. Gibbons Professor of Psychiatry at Duke and has been chairman of the department since 1953. He is currently vice president of the American Psychiatric Association and a director of the American Board of Psychiatry and Neurology.

* * *

Two appointments, including a new assistant dean, two promotions, and a change in title were announced recently at Duke University Medical Center by Dr. R. Taylor Cole, university provost.

Dr. Helen Tepper Kotin, who comes to Duke University from the National Institutes of Health, Bethesda, Md., will be the new assistant dean in charge of research, a newly created post.

Dr. Kotin was special assistant to the director of the division of biologic standards at the National Institutes from 1963 until now. A native of Denver, Colo., she graduated with a B.A. from the University of Colorado and with the M.D. from the University of Colorado School of Medicine.

In the other appointment, Dr. Shirley Kirkman

**AN
ETHICAL
AND
EFFECTIVE
COLLECTION
SERVICE**

SPECIFICALLY DEVELOPED
FOR THE
MEDICAL PROFESSION

*Professional
Service Co.*

93 MASSACHUSETTS AVENUE
BOSTON 15, MASSACHUSETTS

Osterhout, who has been assistant director of the Poison Control Center, becomes an associate in pediatrics.

Promoted are Dr. Eric A. Pfeiffer, from associate in psychiatry to assistant professor, and Dr. K. V. Rajagopalan, from associate in biochemistry to assistant professor.

The single title change makes Dr. David T. Smith a professor in the new Department of Community Health Sciences in addition to his other positions as James B. Duke Professor of Bacteriology and associate professor of medicine.

NEWS NOTES FROM THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE

People to staff local and state mental health centers are being offered advanced training in community mental health under a joint program of the schools of medicine and public health at the U.N.C. School of Medicine and School of Public Health.

The special training program is for psychiatrists, psychologists, social workers, nurses, administrators, social scientists, and others preparing for positions in mental health centers.

One year of training can lead to a certificate in mental health program administration. Two-years in the program here provides eligibility for a master of public health degree.

* * *

Plans for a unique program to help North Carolina hospitals recruit and train full or part-time pharmacists was formally announced at a pharmaceutical seminar at U.N.C.

Fred M. Eckel, director of the state project and an instructor at the U.N.C. School of Pharmacy, outlined a diverse program of traineeships, a graduate program and residency in hospital pharmacy, and two lecture series.

The program, known as the Plan of Assistance to Develop and Improve Pharmacy Service in North Carolina Hospital, is being made possible by the N. C. Hospital Education and Research Foundation.

* * *

All 19 members of the medical technology graduating class of 1966 at the U.N.C. School of Medicine have passed the national certification examination.

The results of the examination were announced by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists.

* * *

U. N. C. trustees have approved the following personnel changes at the School of Medicine:

Dr. John W. Zemp, appointed an assistant professor in the Center for Research in Pharmacology and Toxicology; Dr. Nathan A. Womack, retired as chairman of the Department of Surgery (will continue as Kenan professor of surgery); Dr. Colin G. (Tim) Thomas, promoted to chairman of the Department of Surgery; Dr. James W. Esler, Jr. promoted to assis-

tant professor of anesthesiology; Virginia Long promoted to assistant professor of psychiatric social work; Dr. William G. Thomas, audiologist, approved for a leave of absence until August 31, 1967, to work toward a Ph.D. degree at the University of Florida; Dr. Frederick R. Weedon, to retire July 1 as professor of anatomy.

* * *

Present patterns of drug abuse will probably change in the future, a U.N.C. psychiatrist predicted in an address to the American Epilepsy Society in New York City.

"The 'pure' barbiturate dependency seen before 1955 began to be replaced by cases of meprobamate (tranquilizer) dependency during the latter half of the decade," it was pointed out by Dr. John A. Ewing, chairman of the U.N.C. Department of Psychiatry.

"Now we are seeing increasing numbers of patients with mixed dependency."

"Mixed dependency" refers to patients taking a mixture of drugs.

Dr. Ewing's invitational address to the epilepsy group was based on a report on the over-use of certain non-narcotic drugs which act as depressants on the central nervous system. The report was prepared jointly by Dr. Ewing and Dr. William E. Bakewell, also a U.N.C. psychiatrist.

* * *

New compounds discovered in test tube experiments at the U.N.C. School of Medicine will be used to explore the possibility that they may be effective against certain diseases.

The new studies will be supported in their first year by a grant of almost \$17,000 approved by the National Institute of Arthritis and Metabolic Diseases. The research program will continue for four years under the direction of Dr. J. Dieter Geratz, U.N.C. pathologist.

Dr. Geratz has discovered several compounds remarkably effective in blocking the enzymatic breakdown of proteins.

His research is expected to clarify the causes of certain diseases in animals and possibly add to the knowledge of treating corresponding diseases in human beings.

* * *

Research on a new class of compounds which could become pain-relievers without being habit-forming will be carried out at the U.N.C. School of Medicine under a four-year federal grant totaling about \$250,000.

The National Institute of Neurological Diseases and Blindness has approved the grant to Dr. Louis S. Harris, associate professor of pharmacology at U.N.C., for a study of "narcotic-antagonist analgesics."

The compounds under study seem to provide the pain-relieving benefits of morphine without having morphine's addictive properties.

* * *

Charles D. Trexler, a 37-year-old native of Asheville, has joined the administrative staff of N. C. Memorial Hospital as associate director.

TUCKER HOSPITAL, Inc.

212 West Franklin Street

RICHMOND, VIRGINIA

A private hospital for diagnosis and treatment of psychiatric and neurological disorders. Hospital and out-patient services.

JAMES ASA SHIELD, M.D.

WEIR M. TUCKER, M.D.

GEORGE S. FULTZ, JR., M.D.

EDWARD W. GAMBLE, III, M.D.

CATHERINE T. RAY, M.D.

GERALD W. ATKINSON, M.D.



He also will be an instructor in hospital administration on the U.N.C. faculty.

He has been administrator of the National Children's Cardiac Hospital at the University of Miami School of Medicine in Miami, Florida, for the last year and previously was assistant director of the University of Florida Teaching Hospital and Clinics in Gainesville, Florida, for six years.

* * *

Three medical fellowships, each valued at \$10,000 plus tuition and fees for four years, have been awarded to three college seniors who will enter the U.N.C. School of Medicine next fall.

The three seniors are in the second group to be selected by trustees of the John Motley Morehead Foundation under a new program known as the Morehead Fellowships in Medicine.

Selected as 1967 Morehead Medical Fellows are E. William Cole, III of Arlington, Virginia, now at Harvard University, and William (Will) Bryan Pittman of Wilson and James Allison (Al) Shivers of High Point, both at U.N.C. in Chapel Hill.

* * *

The Southern Conference of Dental Deans and Examiners selected the dean of the U.N.C. School of Dentistry as president-elect at a meeting here.

Dr. James W. Bawden of Chapel Hill will assume the presidency of the 12-state organization next January and the 1969 annual meeting will be held in North Carolina.

* * *

The resignation of Dr. Elizabeth L. Kemble as a dean of the U.N.C. School of Nursing was presented to U.N.C. trustees at their meeting in January.

She has been dean since the school was established in 1951. Under her guidance it became—in 1955—the first school of nursing in North Carolina to receive national accreditation.

Dr. Kemble will continue as dean until a successor is appointed and then she will continue on the faculty here as a professor of nursing.

* * *

Dr. Colin G. Thomas, Jr. has been appointed chairman of the Department of Surgery at the U.N.C. School of Medicine in Chapel Hill.

He succeeds Dr. Nathan A. Womack, chairman since the department was established in 1951. Dr. Womack has retired as chairman but will continue as Kenan professor of surgery.

Dr. Thomas is a 48-year-old native of Iowa City, Iowa, and a medical graduate of the University of Chicago. He was an intern and resident in surgery at the University of Iowa Hospital.

* * *

Vance County, a predominantly rural county in the northeastern Piedmont, has been named the first of two North Carolina counties to participate in a unique community mental health demonstration project.

The purpose of the project is to develop new methods to meet the mental health needs of a rural area.

Findings of the study could be useful in developing new mental health program patterns for the nearly 1,600 other rural counties in the United States.

Dr. William G. Hollister, a psychiatrist, and Dr. J. Wilbert Edgerton, a psychologist, are co-directors of the project. Both are in the Department of Psychiatry at U.N.C. School of Medicine in Chapel Hill.

* * *

The professional schools of health—known collectively as the Division of Health Affairs—at the Division of Health Affairs—at U.N.C. have trained more than 4,500 physicians, dentists, nurses, pharmacists, public health workers and technicians in the last 11 years.

The great majority are practicing in the state.

These facts highlight a history of the U.N.C. Division of Health Affairs compiled by Louis R. Wilson, professor of library science and administration, emeritus.

His history, entitled "Moving Forward to Better Health, 1944-1965," contains details about the number of people trained for health service at U.N.C., the number of patients treated, contributions of the research programs and the provision of refresher courses for practicing professionals.

* * *

U.N.C. is one of the largest suppliers of first-year medical students in the U. S.

The American Association of Medical Colleges reported today that about one of every nine male graduates of U.N.C. here in 1964 applied for medical school,

Compliments of

Wachtel's, Inc.



Surgical Supplies



15 Victoria Road

P. O. Box 1716 Telephone AL 3-7616

ASHEVILLE, North Carolina

APPALACHIAN HALL

ESTABLISHED — 1916

ASHEVILLE

NORTH CAROLINA



An institution for the diagnosis and treatment of Psychiatric and Neurological illnesses, rest, convalescence, drug and alcohol habitation.

Insulin, Coma, Electroshock and Psychotherapy are employed. The institution is equipped with complete laboratory facilities including electroencephalography and X-ray.

Appalachian Hall is located in Asheville, North Carolina, a resort town, which justly claims an all around climate for health and comfort. There are ample facilities for classification of patients, rooms single or en suite.

Wm. Ray Griffin, Jr., M.D.

Robert A. Griffin, M.D.

Mark A. Griffin, Sr., M.D.

Mark A. Griffin, Jr., M.D.

For rates and further information write

APPALACHIAN HALL, ASHEVILLE, N. C.

HIGHLAND HOSPITAL

ASHEVILLE, NORTH CAROLINA

Founded 1904

A DIVISION OF THE DEPARTMENT OF PSYCHIATRY OF
DUKE UNIVERSITY

Accredited by the Joint Commission on Accreditation and Certified
for Medicare

Complete facilities for evaluation of and intensive treatment of psychiatric patients, including individual psychotherapy, group therapy, psychodrama, electro-convulsive therapy, Indoklon convulsive therapy, drugs, social service work with families, family therapy, and an extensive and well organized activities program, including occupational therapy, art therapy, athletic activities and games, recreational activities and outings. The treatment program of each patient is carefully supervised in order that the therapeutic needs of each patient may be realized.

Complete modern facilities with 85 acres of landscaped and wooded grounds in the City of Asheville.

Brochures and information on financial arrangements available

Contact: Mrs. Elizabeth Harkins, ACSW, Coordinator of Admissions
or

Charles W. Neville, Jr., M.D.

Assistant Professor of Psychiatry and Medical Director
Area Code 704 253-2761

making U.N.C. one of the 25 colleges and universities providing the largest number of first-year medical students.

By actual count, A.A.M.C. reported that U.N.C. here graduated 1,035 males two school years ago. Of this number, 119 applied for medical school.

* * *

Dr. John T. Sessions, Jr., a specialist in internal medicine at the U.N.C. School of Medicine, has been appointed chairman of a national drug review panel

He will preside over one of two teams of specialists which will be responsible for a study of the effectiveness of drugs used for the treatment of disorders of the stomach and intestinal tract.

* * *

Twenty trailers costing more than \$175,000 have been purchased with the help of the N. C. Medical Foundation to relieve a shortage of office, laboratory, and classroom space at the U.N.C. School of Medicine.

"The acquisition of trailers has proven most satisfactory and provides the quickest, most convenient and least expensive space obtainable," declared Charles M. Shaffer, U.N.C. director of development, in releasing the Foundation's annual report.

NEWS NOTES FROM THE BOWMAN GRAY SCHOOL OF MEDICINE OF WAKE FOREST COLLEGE

A federal grant of \$2,105,553 was awarded recently to the Bowman Gray School of Medicine for use in the first phase of a \$28-million expansion program planned by the medical school and North Carolina Baptist Hospital.

The grant, awarded through the Health Professions Educational Assistance Act, will support the construction of a 12,000-square-foot addition to the medical school, a 400-seat auditorium and a new power plant, all of which will be located on the north side of the campus. Construction of these facilities will begin in May.

The medical center is eligible for approximately \$14 million in federal grants, provided it can match this amount from private sources. More than \$9.6 million in private funds have been raised to date.

Federal aid for other elements of the medical center expansion program, including the construction of a 14-story hospital and clinics building, probably will not be awarded until 1968. Construction of the hospital building is scheduled to begin in May, 1968, upon the completion of the power plant. The construction timetable calls for the medical school addition and the auditorium to be completed in 1969 and the hospital building to be ready for occupancy in 1970.

The proposed program will increase the size of the center by 80% and will permit the medical school to increase its enrollment by 37%. An expansion of graduate and postdoctoral training programs also is planned.

Hospital construction will increase the number of patient care beds from 483 to 717.

Dr. Fleetus L. Gobble Jr. and Mrs. Virginia B. O'Connell have been appointed to the faculty of the Bowman Gray School of Medicine. Dr. Gobble, a member of the medical school's part-time faculty for the past 16 years, was named instructor in obstetrics and gynecology. Mrs. O'Connell, former treatment coordinator with the Alcoholism Program in Forsyth County, was appointed instructor in psychiatric social work.

Dr. Gobble, who holds the A.B. degree from Duke University and the M.D. degree from the Bowman Gray School of Medicine, also serves as medical director of the Forsyth County Family Planning Clinic, a cooperative project of the medical school and the county's health and welfare departments.

Mrs. O'Connell, who received the B.S. degree from State Teachers College, Florence, Ala., and the M.A. degree from the University of Chicago, is a past president of the Piedmont Chapter, National Association of Social Workers.

* * *

Eight college students from North Carolina have been selected as recipients of Reynolds Scholarships for study at the Bowman Gray School of Medicine.

The scholarship program, sponsored by the Z. Smith Reynolds Foundation, will provide each recipient \$14,000 during his four years in medical school. In addition, the foundation will supplement each scholar's internship salary, during his fifth year of medical education, providing him an income of \$5,000 for that year.

The scholars, selected on the basis of character, scholarship, potential as physicians, and financial need, will enter the Bowman Gray School of Medicine in September. They are Edward E. Boone of Robersonville, Wake Forest College; Warner M. Burch Jr. of Grifton, Wake Forest College; Terrell C. Estes of Winston-Salem, Belmont Abbey College; Frank K. Ferrell of Raleigh, N. C. State University; Thomas H. Hunt of Fayetteville, Emory University; Jerry L. Pruitt of Winston-Salem, Wake Forest College; W. David Purnell of Charlotte, Davidson College; and J. Michael Rogers of Winston-Salem, Emory University.

During the 10 years the scholarship program has been in effect, the Z. Smith Reynolds Foundation has awarded approximately \$1.5 million in scholarships to support medical education.

* * *

Dr. Cornelius F. Strittmatter, professor and chairman of the Department of Biochemistry, has been appointed to the Biochemistry and Nutrition A Fellowships Review Committee of the National Institutes of Health, Division of Research Grants. The appointment, for a term of three and one-half years, became effective Jan. 1.

* * *

The Bowman Gray School of Medicine is one of eight medical schools participating in a national study on the effectiveness of antihypertensive drugs in the management of cerebrovascular disease, including stroke.

The program is sponsored by the National Institutes of Neurological Diseases and Blindness.

Dr. Monroe Cole, assistant professor of neurology, heads the Bowman Gray project which will be supported for the next two years by a \$17,500 grant.

Other schools participating in the study are Emory University School of Medicine, Jefferson Medical College, the Medical College of Georgia, the Medical College of Virginia, University of Michigan Medical School, University of Mississippi School of Medicine and Wayne State University College of Medicine.

* * *

Dr. William T. McLean, associate professor of pediatrics, served as Visiting Chief of Pediatrics Jan. 18 at the James Walker Memorial Hospital in Wilmington. He lectured on "Easily Recognized Syndromes with Mental Retardation" and the "Minimum Brain-Injured Child."

* * *

Dr. C. Glenn Sawyer, professor of medicine, participated in a medical symposium of the East Tennessee Heart Association Jan. 25 in Knoxville, Tenn. He spoke on "The Evaluation and Selection of Rheumatic Heart Patients for Surgery" and "Experience with Mitral and Aortic Valve Prostheses."

SYMPOSIUM ON MEDICINE AND RELIGION

A symposium on medicine and religion will be held at the School of Medicine, University of North Carolina, Chapel Hill, on June 11, 12 and 13, under the title, "The Physician, the Clergy and the Whole Man."

Physicians and clergymen are invited to participate in this occasion, which is sponsored by the Committee on Medicine and Religion of the Medical Society of the State of North Carolina, the Department of Religion of the American Medical Association, and the University of North Carolina School of Medicine.

Nationally distinguished speakers will discuss a number of areas in which physicians and clergymen have mutual interests and responsibilities with regard to patients and their families, including alcoholism, extension of life, psychiatry and religion, and terminal illness and grief. Part of the program will be devoted to small group discussions of these and other topics.

It is hoped that "teams" of physicians and clergymen from the same community may attend. Detailed programs and information regarding registration and housing on request from the Office of Continuation Education, University of North Carolina School of Medicine, Chapel Hill, North Carolina 27514.

NORTH CAROLINA SOCIETY OF INTERNAL MEDICINE

The North Carolina Society of Internal Medicine met in conjunction with the regional meeting of the American College of Physicians at Charlotte on Dec. 9 and 10, 1966.

Dr. Jacob Koomen, Jr., director of the North Carolina State Board of Health, talked on his department's experience with Medicare to date. Dr. Marc J. Musser,

Jr., executive director of the Regional Medical Program of North Carolina, discussed plans for implementing the program in the state. Also participating was Dr. E. Harvey Estes, chairman of the board of directors of the North Carolina program.

Dr. Horace H. Hodges of Charlotte was elected president, succeeding Dr. Joseph B. Stevens.

Other officers elected for 1967 are Dr. W. Howard Wilson of Raleigh, president-elect; Dr. E. Thomas Marshburn, Jr., secretary-treasurer; Dr. Norman H. Garrett, Jr., of Greensboro, first vice-president; and Dr. Walter B. Burwell, of Henderson, second vice-president.

The Month in Washington

The Johnson administration's health legislation program this year includes proposals to expand Medicare and limit Medicaid, and more money is being requested for most federal activities in the health field.

President Johnson also has asked Congress for an anti-air-pollution legislation and stricter anti-water-pollution measures.

The President termed Medicare "an unqualified success," but added "there are improvements which can be made and shortcomings which need prompt attention." He proposed that the 1.5 million disabled persons receiving other Social Security and railroad retirement benefits also be included under Medicare. He said "certain types of podiatry" should be included in Medicare benefits. He further directed the Secretary of Health, Education and Welfare "to undertake immediately a comprehensive study of the problems of including drugs under Medicare."

Johnson noted that only 415,000 (less than half the 850,000 total of nursing home) beds in the nation met federal standards and that only 3,000 of the total of 20,000 nursing homes had qualified under Medicare.

To move toward correcting this situation, he wants more money for more health facilities and better health care institutions for the aged.

The President called for extension of existing legislation to improve state and local health planning for the elderly and to launch special pilot projects to bring comprehensive medical and rehabilitation services to the aged.

As for limiting Medicaid (Title XIX of Social Security), Johnson said that a state should not be permitted to have its income ceilings for medical assistance more than 50% higher than the level set for welfare assistance. The Medicaid program, which now gives states carte blanche as to income standards, became the subject of widespread controversy after New York set an eligibility standard of \$6,000 net income for a family of four.

Twenty-eight states and jurisdictions had Medicaid programs by Jan. 1, 1967, and it is estimated that 30 will have them by July 1, 1967, and 48 by July, 1968. Title XIX programs replace the medical vendor payment part of existing federal-state welfare programs, including Kerr-Mills.

The administration's fiscal 1968 budget calls for general fund expenditures of \$11.7 billion for carrying out existing and proposed new programs of the Department of Health, Education, and Welfare (HEW). This is an increase of \$1.0 billion over cur-

rent year spending. In addition to the general fund outlays on behalf of HEW, the budget forecasts benefit payments and administrative expenditures in 1968 from Social Security trust funds in the amount of \$31.0 billion, an increase of \$5.5 billion over 1967.

—A 5% increase, to \$1.45 billion, for medical research.

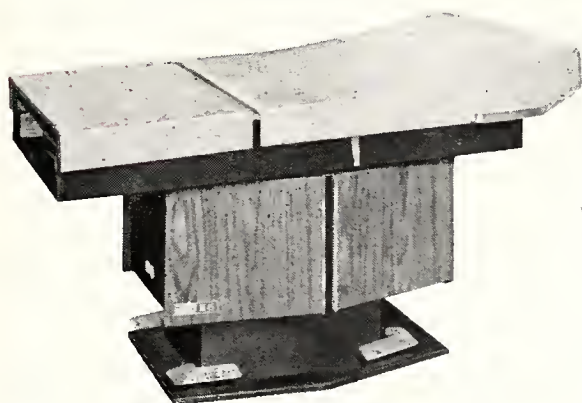
—A \$4 million increase, from \$64 million to \$68 million, for the Food and Drug Administration.

The \$4 million increase for FDA will be used to: (1) expedite the review and surveillance of new drugs for safety and efficacy, (2) expand extramural research into the side effects of oral contraceptives, (3) expand the program established under last year's Drug Abuse Control Amendments, and (4) carry out the new Fair Packaging and Labelling Act. The 1968 budget will also emphasize regulation of barbiturates, amphetamines, and other drugs affecting the

RITTER XL45

EXAMINING AND TREATMENT TABLE

THE
NEW
SHAPE
OF
POWERED
PRACTICE...



Clean, fresh lines and smart, modern color styling make the Ritter XL45 Table a thing of exceptional beauty. *But its beauty is more than skin deep.* The new XL45 is beautifully engineered; functionally superb. The Ritter "pedestal" base, with its ample knee or leg room, allows the physician—seated or standing—to work "close in" to his patients without stress or strain. And smooth, quiet power elevation takes much of the "physical effort" out of examination and treatment procedures.

The designer-styled Ritter XL45 Table is available with a choice of three smart upholstery colors and two table-base colors . . . and the price is equally attractive. See us now for a demonstration.

with beauty that's
more than skin deep

CAROLINA
Surgical Supply Company

706 TUCKER STREET

RALEIGH, N. C.

PHONE 833-8631

central nervous system, and a step-up in FDA's food standards program.

Regional Medical Programs—\$16 million.

It is expected that grants will be awarded to regional groups in 1968 primarily to support a rapid expansion throughout the nation of operational activities begun during 1967, and an expansion and supplementation of planning activities begun in 1966. Emphasis will be on regional planning and coordination of medical resources, continuing education for doctors and other medical personnel, and the rapid distribution of new knowledge and techniques.

The total Children's Bureau budget request for fiscal year 1968 is almost \$246 million, an increase of about 5% or about \$11 million over 1967. The largest share of the approximately \$11 million increase is \$5 million additional for special project grants for health of school and pre-school children.

* * *

New clinical studies are being permitted with DMSO (dimethyl sulfoxide) under guidelines established to provide the maximum protection possible for patients receiving the drug.

Dr. James L. Goddard, Commissioner of Food and Drugs said:

"A comprehensive evaluation of all data available to us on DMSO has been completed. "Indications that the drug may be of value in treating certain conditions justify further clinical investigations."

He warned, however, that these trials must be carefully planned and controlled.

"Serious toxic signs are observed in animals used in DMSO experiments," Goddard said. "Since these effects vary considerably among different species, it is possible that the drug could be less toxic in humans. But this cannot be taken for granted."

Occurrences of eye changes in DMSO-treated animals led the Food and Drug Administration to suspend clinical trials with the drug a year ago.

Classified Advertisements

Pediatric practice available for follow up pediatrician mountain town-county fifty thousand population also drawing other areas. Three hospital town opening suitable two pediatricians with office available and take over arrangements. Marked urgency on this replacement. Write "Placement Service 14-25", P. O. Box 790, Raleigh, N. C.

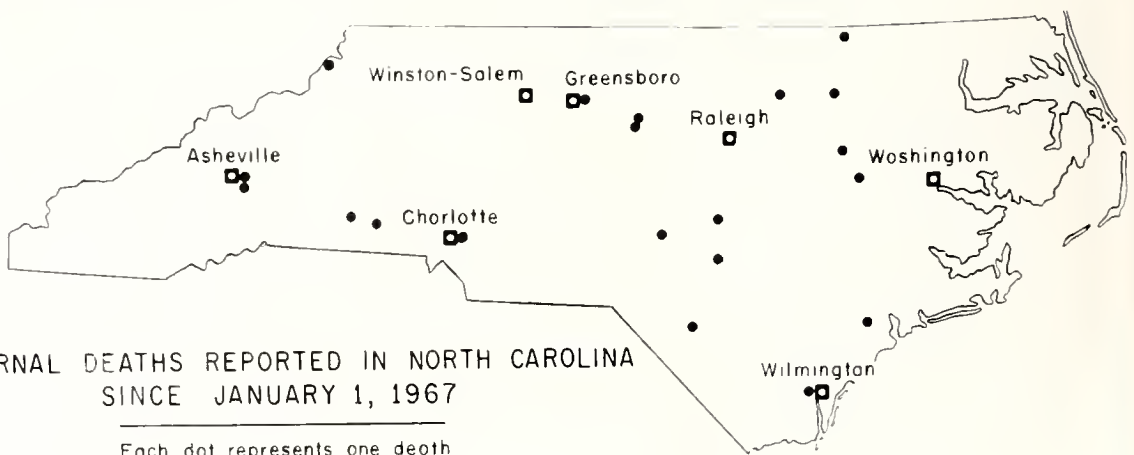
TF

PEDIATRICIAN—Board certified or eligible to associate with busy solo pediatrician. Partnership on percentage basis after first year. Excellent hospital facilities. Write F. L. Raiford, M.D., 722 Fifth Ave., West, Hendersonville, N. C. 28739.

M

POSITION AVAILABLE—MATERNITY AND INFANT CARE PROJECT DIRECTOR: Male or female. Eligible for license to practice in Virginia; Board Certified in Obstetrics and Gynecology or in Pediatrics. Stimulating position in large City Health Department with excellent fringe benefits. Salary range \$15,000 to \$19,600 annually. Employment in advanced step, based upon qualifications. For further information, contact Director of Public Health, Richmond City Health Department, 500 North 10th Street, Richmond, Virginia.

MA





MEDICAL JOURNAL

PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

IN THIS ISSUE:

Mental Illness Among College Students

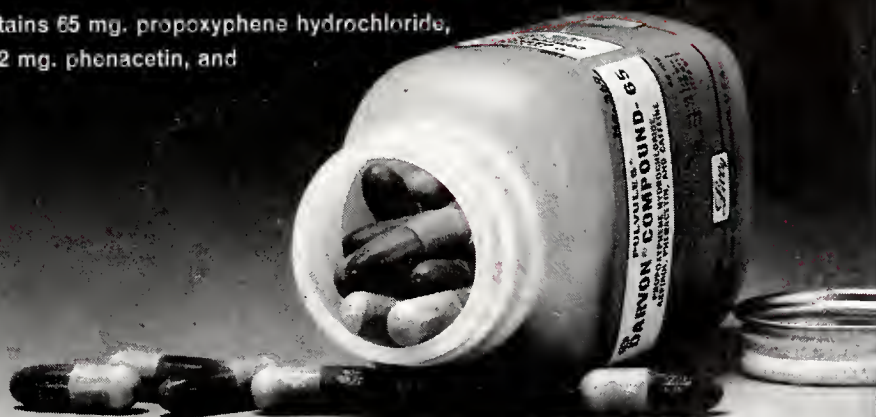
J. THOMAS FOX, JR., M.D.

RECEIVED
1967

DIVISION OF
HEALTH AFFAIRS LIBRARY

Something special **Darvon® Compound-65**

Each Pulvule® contains 65 mg. propoxyphene hydrochloride,
227 mg. aspirin, 162 mg. phenacetin, and
32.4 mg. caffeine.



Additional information available
to the medical profession upon request.
Eli Lilly and Company
Indianapolis, Indiana 46206



700810



Diagnosis:

cystitis?
pyelonephritis?
pyelitis?
urethritis?
prostatitis?
in any case,
usually gram-negative

Therapy:

two 500 mg. Caplets® q.i.d.
(initial adult dose)

Indications: Urinary tract infections caused by gram-negative and some gram-positive organisms.

Side effects: Mainly mild, transient gastrointestinal disturbances; in occasional instances, drowsiness, fatigue, pruritus, rash, urticaria, mild eosinophilia, reversible subjective visual disturbances (overbrightness of lights, change in visual color perception, difficulty in focusing, decrease in visual acuity and double vision), and reversible photosensitivity reactions. Marked overdosage, coupled with certain predisposing factors, has produced brief convulsions in a few patients.

Precautions: As with all new drugs, blood and liver function tests are advisable during prolonged treatment. Pending further experience, like most chemotherapeutic agents, this drug should not be given in the first trimester of pregnancy. It must be used cautiously in patients with liver disease or severe impairment of kidney function. Because photosensitivity reactions have occurred in a small number of cases, patients should be cautioned to avoid unnecessary exposure to direct sunlight while receiving NegGram, and if a reaction occurs, therapy should be discontinued. The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Bacterial resistance may develop.

When testing the urine for glucose in patients receiving NegGram, Clinistix® Reagent Strips or Tes-Tape® should be used since other reagents give a false-positive reaction.

Dosage: Adults: Four Gm. daily by mouth (2 Caplets® of 500 mg. four times daily) for one to two weeks. Thereafter, if prolonged treatment is indicated, the dosage may be reduced to two Gm. daily. Children may be given approximately 25 mg. per pound of body weight per day, administered in divided doses. The dosage recommended above for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Until further experience is gained, infants under 1 month should not be treated with the drug.

How supplied: Buff-colored, scored Caplets® of 500 mg. for adults, conveniently available in bottles of 56 (sufficient for one full week of therapy) and in bottles of 1000. 250 mg. for children, available in bottles of 56 and 1000.

References: (1) Based on 23 clinical papers, 1512 cases. Bibliography on request. (2) Bush, I. M., Orkin, L. A., and Winter, J. W., in Sylvester, J. C.: Antimicrobial Agents and Chemotherapy — 1964, Ann Arbor, American Society for Microbiology, 1965, p. 722.

NegGram
Brand of
nalidixic acid
a specific anti-gram-negative

eradicates most urinary
tract infections...

- Low incidence of untoward effects; no fungal overgrowth, crystalluria, ototoxic or nephrotoxic effects have been observed.
- "Excellent" or "good" response reported in more than 2 out of 3 patients with either chronic or acute gram-negative infections.¹

*As many as 9 out of 10 urinary tract infections are now caused by gram-negative organisms: *E. coli*, *Klebsiella*, *Aerobacter*, *Proteus*, *Paracolon* or *Pseudomonas*... However, infections of the urethra and prostate caused by non-gonococcal gram-negative organisms are believed to be less prevalent.

Winthrop

Winthrop Laboratories, New York, N. Y. 10016

NORTH CAROLINA MEDICAL JOURNAL

OWNED AND PUBLISHED BY

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 28

APRIL, 1967

NUMBER 4

Student Health Psychiatry at the University of North Carolina, 1956-1964

J. THOMAS FOX JR., M.D., AND CLIFFORD B. REIFLER, M.D.

The past several years have produced a number of studies of psychiatric illness among college students. Smith and others^{1,2} employed epidemiologic principles in an attempt to assess the overall prevalence of mental illness in a college population, but most attempts to determine who does and who does not use a college mental health facility are not based on sound statistical analysis. By identifying groups which exhibit high rates of psychiatric usage, and by analyzing how the psychiatry section of the college infirmary functions, we can hope not only to improve our clinical services, but also to decide where preventive measures may be most useful and to begin to gain some understanding of the factors influencing both illness and psychiatric consultation.

The college population affords unusual opportunities for study.^{3,4} The college experience represents a critical period in the life cycle and includes many people who will become leaders in their later life. College students represent a relatively homogeneous segment of the population, are engaged in a common task in a fairly uniform environment, and are available for study.

In 1962 Selig⁵ found that approximately 1% of the student body of the University of North Carolina was being evaluated in the psychiatry section of the University infirmary during one semester; however, there has never been a detailed study of the

psychiatric patient population of the infirmary over a period of time. It was felt that such a study would be useful in clarifying categories of patients and thereby identifying high risk groups; in planning mental health facilities and preventive measures; and in providing a basis for further research. This paper is a report of a study of University of North Carolina students seen because of psychiatric problems during the nine-year period June 1, 1956, to May 31, 1964.

Material

The University of North Carolina, chartered in 1789, is a large liberal arts institution located in Chapel Hill. The total population of the town, including University students, has grown from approximately 19,000 in 1956 to approximately 28,000 in 1964. During the same period the student body increased from about 7000 to 11,300 students, about one fourth of whom have consistently been in the graduate or post-baccalaureate professional schools. Male students have always outnumbered female students, but the overall ratio of men to women has gradually declined from 4.7:1 in 1956 to 3.4:1 in 1964. There are proportionally more women in the junior and senior classes (1964 male-female ratio, 2.3:1) than in the freshman and sophomore classes (1964 male-female ratio, 7.4:1) because of the transfer of women from other colleges after the sophomore year.

The director of the Student Health Service at the University has a staff of seven full-time physicians. A well-equipped 65-bed infirmary is attached to a wing of North Carolina Memorial Hospital, the primary

From the Department of Psychiatry and Student Health Service, University of North Carolina, Chapel Hill.

Request for reprints to the Department of Psychiatry, the University of North Carolina, Chapel Hill, N. C. 27515 (Dr. Reifler).

teaching hospital for the University of North Carolina School of Medicine. The psychiatry section of the Student Health Service is staffed by two members of the faculty in the Department of Psychiatry, who devote the major portion of their clinical time to this service. Under their supervision second and third-year psychiatric residents devote varying amounts of time to student health as a part of their required training. All professional services of the infirmary, including psychiatric consultations, are covered by the student health fee.

Except for the testing service, which provides solely vocational and educational testing and counseling, the Student Health psychiatry section represents the only formal counseling service available to students. Students usually seek help of their own accord or are referred by a physician, dean, pastor, dormitory adviser, teacher, friend, or others. Students with a psychiatric history who apply for admission to the University may be interviewed in order to acquaint them with the available facilities and to assess the degree of their current adjustment.

Psychiatric treatment in the infirmary is oriented toward acute problems. Consequently, students are usually seen only a few times, and the psychiatrists generally limit themselves to evaluation, immediate therapeutic intervention, and referral when necessary. If long-term outpatient therapy is indicated, the patient is referred to the North Carolina Memorial Hospital Department of Psychiatry staff or to private clinics. If hospitalization is indicated, the inpatient services of North Carolina Memorial Hospital are available, as are several other nearby state and private hospitals.

Method

A chart was kept for each patient seen in the psychiatry section of the infirmary. An interviewer obtained the customary history and arrived at a tentative diagnosis, more or less in accordance with the nomenclature of the American Psychiatric Association.⁶ Where no diagnosis was made, the chart was reviewed and, if appropriate data were available, the patient was classified according to

the major diagnostic categories of neurosis, psychosis, character disorder, and situational reaction. If contact was for screening or other administrative purposes, the patients were so classified. A final category labeled "unclear, unclassifiable, or unknown" (UUU) included patients for whom no diagnosis was made and those judged to have "no illness." This category was avoided whenever possible. If the chart included no mention of referral for inpatient or outpatient treatment, it was assumed that no referral was made. In certain instances the eventual disposition of the case was unclear and therefore was categorized "unknown."

Information from each patient chart was then coded and punched on a peripheral punch card (McBee Keysort). This facilitated easy retrieval of such data as age, sex, class in college, diagnostic impression, number of infirmary visits, eventual disposition, etc. From these cards data were then compiled for each year of the period under study. These statistics were then related to the comparable data available on the entire UNC student population for the fall semester of the corresponding academic year (June 1-May 31).

Patients were categorized by college class rather than age, because while class and age were closely correlated in the undergraduate population, the post-baccalaureate students ranged in age from 21 to more than 50 years. National origin was not reported because so few of the students were foreign. Race was not studied because University statistics on this factor were not available.

Limitations of the Data

Currently there is much discussion about the traditional psychiatric nosology. In 1954 Monks and Heath⁷ considered the accepted classification of disease and injury inadequate in dealing with a college population. They therefore devised a whole new system of classification of academic, social, and personal problems for use in a student health service. Although the APA Diagnostic and Statistical Manual is far from ideal in categorizing psychiatric disorders among college students, it was used in this study. Moreover, during the nine-year period under

study, a number of different psychiatrists served at the infirmary, resulting in the use of different diagnostic concepts and criteria.

Another limitation is that one patient may appear in the statistics more than once if he was evaluated in different years during the study. Except for patients diagnosed as psychotic or ones coming for screening interviews, these patients represent a relatively small percentage of the clinic population.

The "population at risk" figure was taken to be the number of students enrolled for the fall semester. This number declines gradually during the school year and is therefore a maximum rather than a true representation of the student population for the academic year. In addition, the number of "summer session only" students is not taken into account in the base population figures. While there is no way of assessing the degree to which these factors influence our figures, they appear to operate in opposing directions and thus tend to compensate for each other. It is felt that the degree of error introduced by these factors is minimal.

Presumably some students obtain private psychiatric care without being evaluated at the infirmary. Although such instances may be increasing over the years as private psychiatric care becomes more available, the percentage of students involved is still believed to be small.

Results

As can be seen from Figure 1, the number of new patients seen in the psychiatry section of the Student Health Service has increased each year but one. For reasons apparently related to staffing, there was a slight reduction in the number seen in 1959. The total U. N. C. student body has also increased, however, and thus it becomes necessary to study the rate at which the students are seeking psychiatric attention. Figure 2 depicts the increasing rate of patients being seen each year in comparison with the increasing number of students enrolled in the University.

In actual numbers, more men than women students were seen each year. In terms of the total student population, male and female,

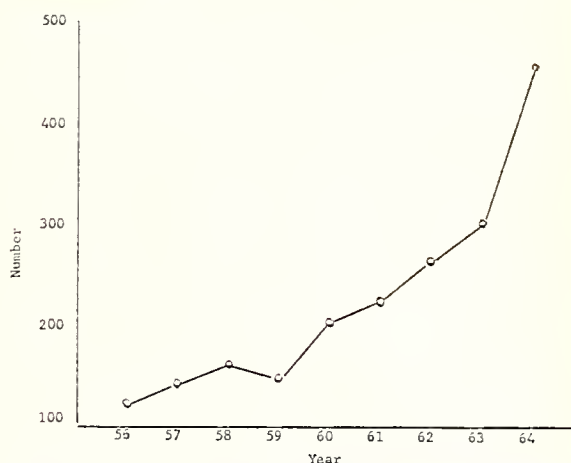


Fig. 1. Number of students seen in Student Health Psychiatry for all reasons, by year.

however, proportionately more women than men students have used the psychiatric service (Fig. 3). This preponderance of women is consistent with the findings of most investigators.

Age was not analyzed in this study. Although about 80% of the student body falls within 18 to 23 years of age, the psychiatric patient population ranged from a 16-year-old freshman to a 58-year-old woman graduate student who was psychotically depressed.

Analysis of the patient population according to college class standing is shown

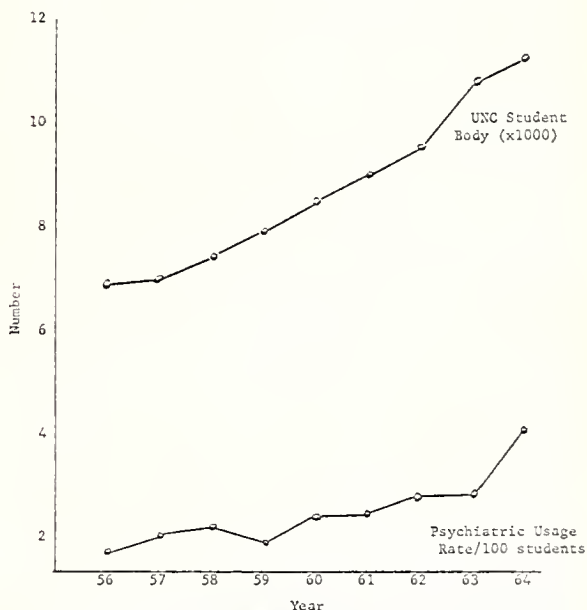


Fig. 2. Psychiatric usage rate. Student Health Service population compared with student body population, 1956-1964.

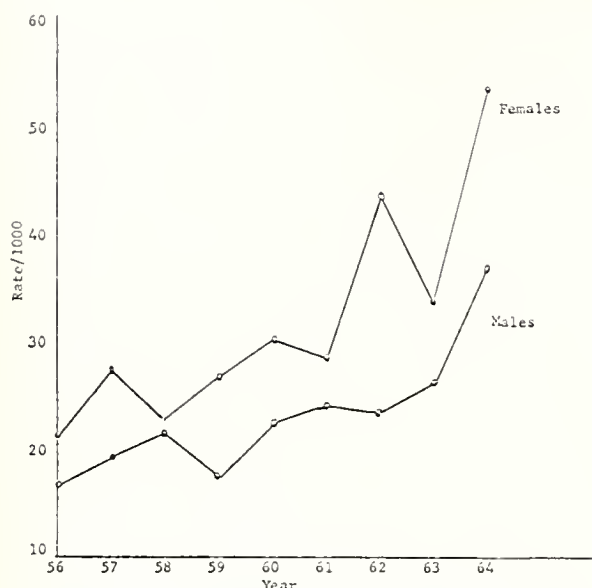


Fig. 3. Rate of student usage of psychiatric services by year and by sex.

in Figure 4. For each class an average was obtained by taking the mean of the rates available per year of the nine-year period. The average rates for freshmen and sophomores were virtually identical—22.6 and 22.3 respectively—as were the average rates for juniors and seniors—28.5 and 28.6. The average rate for graduate students was 26.0.

Figure 5 shows the rates of psychiatric usage by sex and graduate-undergraduate status. The rates at which women graduate students sought psychiatric attention consistently exceeded the rates for men graduate students. Except for two reversals, the rate for women graduate students was consistently higher than that of undergraduate women. Thus women graduate students presented the highest rate of psychiatric usage of any group we studied in the University.

Table 1
Distribution of Diagnoses
1956-1964 Average

Diagnosis	Percent
Neurotic reaction	40
Character disorder	28
Transient situational reaction	14
Psychotic reaction	7
Screening and administrative visits	7
Unclear, unclassifiable or unknown	4

Diagnostic impressions of the patients remained relatively constant throughout the study period. Table 1 summarizes the diagnostic categories encountered.

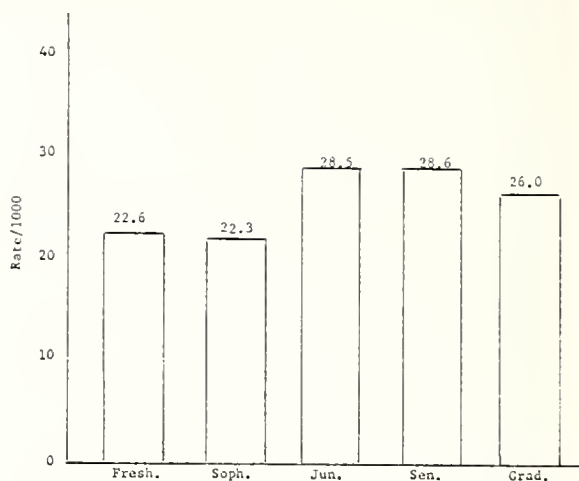


Fig. 4. Rates of psychiatric usage, Student Health Service, by academic class, 1956-1964.



Fig. 5. Rate of student usage of psychiatric services in infirmary by year, sex, and possession of bachelor's degree, 1956-1964.

Sixty-eight percent of the patients presented problems consistent with neurotic reactions (40%) or long-standing characterologic disorders (28%). An average of 14% were felt to have primarily transient situational reactions, 7% were diagnosed as psychotic, 7% were seen for screening or administrative purposes, and 4% fell into the UUU category.

Probably a higher percentage of students with psychoses come to the attention of the psychiatrists than do students with other diagnoses. Somewhat less than 2 per 1000 students per year were seen and diagnosed as psychotic. The vast majority of these patients were thought to be schizophrenic.

Table 2
Percentage of Patients per Interview
1956-1964 Average

No. of Visits	Percentage
One	49)
	) 75
Two	26)
Three	10)
	) 15
Four	5)
Five	4)
	) 10
Six or more	6)

Table 2 gives the percentage of students according to the number of visits to the psychiatric service. Approximately three fourths of the patients were seen only once or twice. Nineteen percent were seen on three, four, or five occasions, and 6% were seen six times or more. Students who were evaluated at the request of the college administration, or who were being screened prior to their return to college, usually were seen only for the initial interview. Rarely, patients were interviewed as many as 15 or 20 times, but generally the therapist's aim was brief psychotherapy within a diagnostic framework and referral when indicated.

The final disposition of the cases is shown in Figure 6. Because there appeared to be certain trends over the nine years, it was felt useful to portray the data graphically and include in the graph a curve showing the rising rate of clinic usage per 1000 students. The percentages for the "failed to return" and the "unknown" categories are not included in Figure 6 for reasons of clarity.

An increasing percentage of patients are being classified in the "referral not indicated" category. Generally speaking, these were cases in which the interviewer and the patient agreed that the presenting problem had been solved reasonably well and that no

further visits were indicated. A transient depressive episode, interpersonal difficulties, unhappy love affairs, are illustrative of that category.

Although the number of patients being referred for further outpatient treatment is increasing, the percentage is decreasing. A smaller percentage of patients appear to need long-term therapy.

An overall average of 17% of the patients failed to keep followup appointments. Some returned later, but the majority were not seen again, suggesting that their problems had been "solved" in one way or another. It is not known how many of this group dropped out of college.

Consistently, a small percentage of the patients were hospitalized. This figure varied from 3% to 9% during the period under study, for an average of 6%. Roughly one half of this group were schizophrenic; the other half consisted largely of patients who had attempted suicide or were judged to be serious suicidal risks.

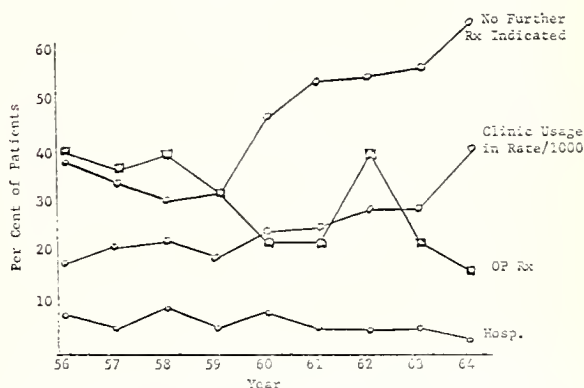


Fig. 6. Percentage of patients, Student Health Service, by recommended disposition and year. Clinic usage rate is superimposed.

In an average of 2% of the cases, the eventual disposition was sufficiently unclear to justify the classification "unknown."

Discussion

At the University of North Carolina not only is the number of students seeking psychiatric attention each year steadily growing but it is growing at a faster rate than the growth rate of the University at large. The rate of students seeing the infirmary psychiatrists has risen from 18 consultees

per 1000 students in 1956 to 41 consultees per 1000 students nine years later. Increased awareness of the availability of professional psychiatric help has undoubtedly contributed to this increase. An open clinic allows a majority of self-referrals, probably reflecting a growing sophistication among students and, hopefully, a weakening of the stigma attached to seeking help for emotional disturbances. Also, the rising number of administrative visits by students indicates more general acceptance of Student Health psychiatry by the University administration.

Different authors, using vastly different criteria, have reached varying conclusions regarding the incidence of psychiatric illness among college students.^{1,8-13} Heath and Gregory⁸ concluded that of 259 sophomores chosen on the basis of good health, satisfactory academic status, and overtly good social adjustment, actually 90% had problems meriting professional consultation. Farnsworth⁹ stated that roughly 10% of any student body is likely to need help in a given college year. Other estimates range from 1.5% (Schwarz¹⁰) to 10.4% (Baker¹¹).

The current proportion of students seeking psychiatric help at U.N.C. is 41/1000. This figure is less than the incidence reported by Baker¹¹ (71/1000) and Selzer¹² (80/1000). However, it is many times greater than the incidence of 15/1000 students reported by Schwarz.¹⁰

Although the actual usage of psychiatric services has increased significantly during these nine years, it is doubtful that students are more severely disturbed now than previously. It is likely that more students with situational or adjustment problems are now inclined to talk with a psychiatrist without defining themselves as psychiatric patients. The incidence of psychosis found in this study was 1.7, including continued cases. This figure compares closely with that found by Raphael and Gordon¹⁴ at the University of Michigan. Apparently the rate of severely ill students has remained relatively constant, and hopefully, can be used as a guideline in planning college mental health facilities.

The higher rate of women students seeking psychiatric help found in this study

agrees with the findings of other investigators.^{15,16} Why is this so? Binger¹⁷ feels that academic competition in present day education places an extra strain on college women. Perhaps the conflict between the traditional feminine image in society and the newly emerging professional role of women contributes to the greater need for psychiatric help among women. This conflict may account for the significantly higher rate of psychiatric usage of women graduate students, whose peers generally have become homemakers and mothers.

With regard to college class standing, Baker and Nidorf¹⁸ reported a general decrease in the number of students seeking psychological help each year of the four-year college course. Obviously many students unable to meet the stressful demands of college life drop out or are forced to drop out of college. Braaton and Darling¹⁶ reported more mental health patients among freshmen than from other classes, though because of "health interviews" with first-year students, it was not clear that more freshmen were emotionally disturbed than upper classmen. Our finding of relatively low clinic usage rates for U.N.C. freshmen and sophomores is surprising in view of the obvious discontinuity in the student's life at that time. Does the University offer special support to its new students? This is certainly an area for further study.

Nelson,¹⁹ in studying graduate students in the School of Arts and Sciences at Harvard University, found an annual psychiatric usage rate of 67/1000 students—far higher than our rate of 26/1000 graduate students at the University of North Carolina. Investigation has been limited in this area, and there are few other statistics available for graduate school populations. Our figures clearly show that women graduate students compose a high-risk group, although the contributing factors are not clear.

Differences of criteria used by different investigators make it difficult to compare data relating to diagnostic categories. For instance, Selzer¹² suggested that college students are often underdiagnosed, while Monks and Heath⁷ felt that the use of tra-

ditional medical diagnosis tended to result in overdiagnosis of student disorders. They devised a supplementary classification of academic, social, and personal problems encountered in student health services. Our study probably leans toward "overdiagnosis." If the patient reported symptoms, he was placed in some diagnostic category.

The proportion of students falling into the broad diagnostic categories remained relatively constant throughout the nine years of our study. The mean yearly distribution of diagnoses showed that 68% of the students presented with neurotic or character disorders. Swartz and others²⁰ found 78% presenting with neurotic reactions or personality disorders. Allen and Janowitz,²¹ placed only about 37% of their patients in these two categories, classifying about 34% as having adjustment reactions. Our study showed a yearly average of 14% of the patients suffering from transient situational reactions. Swartz and associates similarly classified 11% in that category.

Perhaps the most reliable and comparable diagnostic category is psychosis. Approximately 7% of our patients were so classified—the same percentage found by Allen and Janowitz²¹ and Swartz and others.²⁰ However, some authors report much higher percentages of their patients in this classification. Selzer,¹² in 1960, reported that 21.7% of the patients seen by psychiatrists at the Mental Hygiene Clinic at the University of Michigan were schizophrenic. That figure is misleading, however, since the psychiatrists tended to see only those patients with the more severe problems, while nonmedical therapists interviewed the less seriously disturbed patients. In addition, Selzer's criteria for the diagnosis of schizophrenia was more inclusive than that of many other authors.

A look at the number of visits made to the psychiatric section of Student Health per patient is interesting. Gundle and Kraft¹³ in their survey of college mental health programs, found an average of 4.8 interviews per patient among the 728 colleges responding to their questionnaire. Selzer¹² and Allen and Janowitz²¹ each reported that 38% of their patients had four interviews or less.

Our study showed that at the University of North Carolina almost half of the patients were seen for only one interview, and that 75% were seen only one or twice. Ten percent had three interviews, and the remainder came four or more times. Thus patients apparently are seen by psychiatrists fewer times at the University of North Carolina than at most other colleges with comparable facilities.

Most college mental health facilities assume the entire responsibility for the mental health needs of their students, but at the University of North Carolina excellent low-cost psychiatric facilities are available on referral (29% of the patients are referred for outpatient therapy). North Carolina Memorial Hospital and the availability of many private psychiatrists facilitate referral of patients needing long-term treatment. Thus the University infirmary functions more as a psychiatric triage center, making it difficult to compare referral and treatment data with that of other centers.

It is interesting, however, to note the trends in patient disposition over the nine-year span (Fig. 6). The percentage of patients who are not referred for further treatment is increasing, while the percentage of patients being referred for outpatient treatment appears to be decreasing. This suggests that the infirmary psychiatrists, through immediate psychotherapeutic intervention, may be helping patients to deal with their problems more efficiently, thus reducing the need for long-term treatment. Also, the less seriously disturbed students may be seeking help now to a greater extent than previously. Evidence of this may be the finding that the percentage of patients requiring hospitalization is decreasing.

An average of 17% of the patients failed to keep return appointments. The reasons are unclear, but certainly it would be interesting to know why these patients failed to return. Perhaps they dropped out of college; perhaps they failed to get the help they expected; or perhaps they improved and did not feel the need to return.

It is hoped that this study helps clarify which students seek psychiatric attention in

a university, and how the psychiatry section of a student health service responds. Comparative studies such as this offer a basis for evaluating the emotional problems of college students, particularly in view of the current concern over dropouts (see Harrison²² and Curtis and Curtis²³), and methods of handling them. As Davie²⁴ has done, we need to study why certain students come to university psychiatrists, and why other apparently equally disturbed students don't come.

Cohort studies in which one college class is analyzed throughout its entire college experience would be useful in identifying the times and points of greatest risk during a student's college career. Another area for further research lies in evaluating attempts to help the psychiatrically impaired student reach a greater degree of adjustment throughout his whole college career.

Psychiatrists need to study and clarify the most effective means of treating college students. Careful analysis of the demographic data can help identify the magnitude of the problem, offer clues to the prevention of psychiatric disorders, and form a basis for evaluating preventive measures. A continuing appraisal of the role and function of the college infirmary is necessary if we are to increase our understanding of and improve our service to the student community.

Summary

An epidemiologic survey of the psychiatric section of the Infirmary of the University of North Carolina from 1956 to 1964 is reported. The rate of students utilizing this service has risen from 18/1000 students in 1956 to 41/1000 students in 1964.

The rate of women seeking help has consistently exceeded that of men. There was little difference in usage rates among the college classes, but women graduate students were found to be seeking psychiatric attention at a higher rate than any other group studied.

The patients were classified according to diagnosis, the number of visits with the psychiatrist, and eventual disposition of the cases. These findings are compared with those from other institutions.

As the demands for a college education increase, as universities grow larger and more impersonal, as the pressures of academic life intensify, it becomes clear that more students are seeking help from the infirmary psychiatrists. It seems important, then, that we analyze carefully our demographic data in order to understand better the emotional problems of college students, and to clarify our role in treating psychiatric illness and handicap in the student community.

References

1. Smith, W. G., and others: Psychiatric Disorder in a College Population, *Arch Gen Psychiat* 9: 351-361, 1963.
2. Smith, W. G., and others: Mental Illness and Values in a College Population, *J Nerv Ment Dis* 138: 156-162, 1964.
3. Group for the Advancement of Psychiatry: The Role of Psychiatrists in College and Universities, Report 17, Topeka, Kansas, 1950.
4. Group for the Advancement of Psychiatry: The College Experiment: A Focus for Psychiatric Research, Report 52, Topeka, Kansas, 1962.
5. Selig, J. W.: Psychiatric Problems of University of North Carolina Students, unpublished dissertation, University of North Carolina, Chapel Hill, 1963.
6. American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorder, Washington, D. C., 1952.
7. Monks, J. P., and Heath, C. W.: A Classification of Academic, Social, and Personal Problems in a College Student Health Department, *Student Med* 2: 44-62, 1954.
8. Heath, C. W., and Gregory, L. W.: Problems of Normal College Students and Their Families, *School and Society* 63: 355-358, 1946.
9. Farnsworth, D. L.: Mental Health in College and University, Cambridge, Mass., Harvard University Press, 1957.
10. Schwarz, C. J.: A Psychiatric Service for University Students, *Canad Psych Assoc J* 9: 232-238, 1964.
11. Baker, R. W.: Incidence of Psychological Disturbance in College Students, *Amer Coll Health Assoc J* 13: 532-540, 1965.
12. Selzer, M. L.: The Happy College Student Myth, *Arch Gen Psychiat* 2: 131-136, 1960.
13. Gundle, S., and Kraft, A.: Mental Health Programs in American College and Universities, *Bull Menninger Clin* 20: 57-69, 1956.
14. Raphael, T., and Gordon, M. A.: Psychoses Among College Students, *Amer J Psychiat* 95: 659-675, 1938.
15. Landfield, A. W., and others: A Quarter Century in the Life of a University Mental Hygiene Clinic, *Amer Coll Health Assoc J* 12: 202-207, 1963.
16. Braaten, L. J., and Darling, C. D.: Mental Health Services in College: Some Statistical Analyses, *Student Med* 10: 235-253, 1961.
17. Binger, C. A. L.: Emotional Disturbance Among College Women, in Blaine, G. B., and McArthur, C. C.: *Emotional Problems of the Student*, New York, Appleton-Century-Crofts, Inc., 1961.
18. Baker, R. W., and Nidorf, L. J.: Pattern of Occur-

- rence of Psychological Disturbance in College Students as a Function of Year Level, *J Clin Psychology* 20: 530-531, 1964.
19. Nelson, R. L.: Special Problems of Graduate Students in the School of Arts and Sciences, in Blaine, G. B., and McArthur, C. C.: *Emotional Problems of the Student*, New York, Appleton-Century-Crofts, Inc, 1961.
 20. Swartz, J., and others: *Psychiatric Problems in an Urban University*, *Ment Hygiene* 42: 224-228, 1958.
 21. Allen, D. A., and Janowitz, J. F.: A Study of the Outcome of Psychotherapy in a University Mental Health Service, *Amer Coll Health Assoc J* 13: 361-378, 1965.
 22. Harrison, R. W.: Leaving College Because of Emotional Problems, in Wedge, B. M. (ed): *Psychosocial Problems of College Men*, New Haven, Yale University Press, 1958.
 23. Curtis, J. R., and Curtis, T. E.: A Study of Dropouts at the University of North Carolina, *Amer Coll Health Assoc J* 14: 140-146, 1966.
 24. Davie, J. S.: Who Uses a College Mental Hygiene Clinic? in Wedge, B. M. (ed): *Psychosocial Problems of College Men*, New Haven, Yale University Press, 1958.

Thrombocytopenia in Rocky Mountain Spotted Fever

H. W. GARBEE AND W. M. KELSEY, M.D.

Although hemorrhagic manifestations constitute one of the more important signs of Rocky Mountain spotted fever, it has been only seven years since attention was focused on thrombocytopenia in this disease.¹ Isolated reports appeared prior to 1960²⁻⁶; however, the importance of thrombocytopenia in Rocky Mountain spotted fever has only been recognized since 1960⁷⁻¹¹. Thirteen cases have been reported in which bone marrow has been studied.^{1,10,12}

Method

The records of 48 patients with Rocky Mountain spotted fever on the Pediatric Service of the North Carolina Baptist Hospital during the period from 1947 to 1966 were reviewed. A platelet count of less than 150,000/cu mm was considered to represent thrombocytopenia. At least one platelet count was done in 17 of the 48 cases. Nine of the 17 patients had counts below 150,000. Eight of these counts were less than 100,000 and two were lower than 50,000. In an additional case, platelets were reported as "rare and large on smear" without a confirmatory count. The capillary fragility was increased in 6 out of 12 patients in whom it was tested. No correlation could be made between low platelet counts and the presence of the Rumpel-Leede phenomenon because of inadequate

data. Seven patients were noted to have a prolonged prothrombin time.

Discussion

Thrombocytopenia is a common problem in infectious diseases.^{1,8,13,14} It would appear that thrombocytopenia may be a more common occurrence in Rocky Mountain spotted fever than has been previously recognized.

For editorial comment see page 155

The mechanism of thrombocytopenia in this disease has not been studied well enough to determine whether it is caused by failure of production of platelets or peripheral sequestration of platelets.^{9,12,15} The finding of normal megakaryocytes in the bone marrow of 12 out of 13 patients would suggest that a peripheral mechanism is involved in the platelet deficiency.

The incidence of thrombocytopenia in Rocky Mountain spotted fever may be higher than has been suspected. Schaffner and others¹² noted the occurrence in 33% of 22 patients, or 40% of those in whom the platelets were carefully studied. They observed that thrombocytopenia was present in 60% of reported cases in the literature where a platelet count had been done.

The data from the North Carolina Baptist Hospital reported here, even though inadequate, agrees favorably with these figures. The overall incidence of thrombocytopenia in the 48 patients reported in this study was 21%; however, considering only the 18 cases

From the Pediatric Service, North Carolina Baptist Hospital and the Department of Pediatrics, Bowman Gray School of Medicine, Winston-Salem, N. C.

Reprint requests (WMK) to the Department of Pediatrics, Bowman Gray School of Medicine, Winston-Salem, N. C., 27103.

in which a platelet evaluation was made, the incidence was 56%. After reviewing these data it becomes apparent that more careful studies of coagulation disorders should be done in this disease.

With the advent of antibiotics the clinical course of Rocky Mountain spotted fever has changed so markedly that physicians are no longer so concerned over the danger of the disease. For this reason, less attention has been given to a careful study of the patients, and there has been little consideration of fatal or serious hemorrhages. Nida and Riley⁷ reported one case of intracranial bleeding with hemiplegia. In the present series, one patient who had a platelet count of 96,000 developed spasticity of the right leg, and 2 died with massive gastrointestinal bleeding; one having had no platelet estimation and one a count of 73,000. Missirliu¹⁶ reported one case with massive hemorrhage.

One would suspect that patients with thrombocytopenia should be treated in the same manner as patients with idiopathic thrombocytopenic purpura associated with other infectious diseases.^{15,17} Studies should be done in more cases to find out whether a rising platelet count is of prognostic significance. This has been suggested by Schaffner.¹² In the present cases, a rapid return of the platelet count to normal levels was noted following clinical improvement of the patient.

Rocky Mountain spotted fever can be successfully treated if it is diagnosed or suspected early in the course of the disease. The presence of thrombocytopenia and purpura should alert the physician to the possibility of Rocky Mountain spotted fever and consideration of the prompt use of appropriate antibiotics.

Summary

A retrospective study of 48 children with Rocky Mountain spotted fever revealed that thrombocytopenia was present in 21% of the total cases and in 56% of the cases in which platelet evaluation was sought. A review of the literature would suggest that more attention should be paid to coagulation defects in this disease.

References

1. Phillips, C. W., Kimbrough, G. T., Weaver, J. A., and Tucker, A. L.: Rocky Mountain Spotted Fever with Thrombocytopenia, *Southern Med J* 53: 867, 1960.
2. Pullen, R. L., Sodeman, W. A., and Felknor, G.: RMSF—Differentiation from Typhus Fever and Report of a Case, *New Orleans Med J* 97: 359, 1945.
3. Diggs, L. W.: Spotted Fever—Case report, *Memphis Med J* 19: 3, 1944.
4. Reading, B., and Klint, H. A.: Clinical Observations on Spotted Fever in the Gulf Coast Area of Texas, *Texas Rep Biol Med* 1: 97, 1943.
5. Dardinski, V. J.: RMSF—Report of a Case Developed Postpartum, *Med Ann D C* 10: 181, 1941.
6. Florman, A. L. and Hafkenschiel, J.: The Eastern Variety of RMSF, *Bull Johns Hopkins Hosp* 66: 123, 1940.
7. Nida, J. R., and Riley, H. D.: Thrombocytopenic Purpura in RMSF, *Southern Med J* 55: 1320, 1962.
8. Mengel, C. E., and Trygstad, C.: Thrombocytopenia in RMSF, *JAMA* 183: 886, 1963.
9. Trigg, J. W.: Hypofibrinogenemia in RMSF, *New Eng J Med* 270: 1042, 1964.
10. Atkins, M. D., Strauss, H. S., and Fisher, G. U.: A Case Report of "Cape Cod" RMSF with Multiple Coagulation Disturbances, *Pediatrics* 36: 627, 1965.
11. McMurry, J. F.: Review of RMSF, *J Oklahoma Med Assoc* 59: 165, 1966.
12. Schaffner, W., McLeod, A. C., and Koenig, M. G.: Thrombocytopenic RMSF: Case Study of a Husband and Wife, *Arch Int Med* 116: 857, 1965.
13. Clement, D. H. and Diamond, L. K.: Purpura in Infants and Children, *Amer J Dis Child* 85: 259, 1953.
14. Doan, C. A., Bouroncle, B. A., and Wiseman, B. K.: Idiopathic and Secondary Thrombocytopenic Purpura—Clinical Study and Evaluation of 381 Cases Over a Period of 38 years, *Ann Int Med* 53: 861, 1960.
15. Smith, C. A.: Blood Diseases of Infancy and Childhood, St. Louis: The C. V. Mosby Co., 1966, pp 696-721.
16. Missirliu, C., Missirliu, M. F., and Etteldorf, J. N.: RMSF in Children, *J Pediat* 53: 303, 1958.
17. Workman, J. B., Hightower, J. A., Borges, F. J., and others: Cortisone as an Adjunct to Chloramphenicol in the Treatment of RMSF, *New Eng J Med* 246: 962, 1952.

In the first period of life, our food ought to be light, nourishing and frequently taken. Food that is solid, with a sufficient degree of tenacity, is most proper for the state of manhood. The diet suited to the last period of life, when nature is upon the decline, approaches nearly to that of the first. It should be lighter and more succulent than that of vigorous age, and likewise more frequently taken.—William Buchan, M.D.: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, etc., Philadelphia, Richard Folwell, 1799, pp 65-66.

The Treatment of Scoliosis

FRANK C. WILSON, JR., M.D.

The correction of lateral curvature of the spine has provided an irresistible challenge to physicians since the time of Hippocrates. In spite of some two thousand articles on the subject in the world literature, however, scoliosis remains an unsolved problem. The cause in most cases is still unknown, and a complete "cure" is almost never achieved. The therapeutic pendulum has swung from brace and buckle to the scalpel, and may now be swinging back toward the brace. The purpose of this article is to review some of the fundamentals of scoliosis, and to consider the evolution and current status of its treatment.

Classification

Scoliosis may be classified as functional or structural. Functional curves are caused by such conditions as inequality in the length of the legs or bad posture, and disappear in the supine position. If these curves are not corrected, structural changes may develop in the vertebrae. Structural curves are fixed by wedging, angulation, and rotation of the vertebral bodies.

Three broad categories of structural scoliosis are recognized: congenital, paralytic, and idiopathic. Congenital curves, usually the result of malformations of the vertebrae or ribs, seem to be increasing in frequency, while paralytic deformities have declined with the reduction of poliomyelitis. The largest group of cases are those in which the etiology is unknown, which show a predilection for adolescent girls, and in which the curve appears in the dorsal spine with its convex side to the right. Miscellaneous conditions that occasionally cause scoliosis are neurofibromatosis, arthrogryposis, achondroplasia, Marfan's syndrome, and osteogenesis imperfecta.

Mechanics

The first curve to appear is called the

primary curve. It usually acquires structural characteristics and is followed by the development of secondary or compensatory balancing curves above and below. When full balance is not restored by these secondary curves, the head is no longer centered over the sacrum and the curve is said to be decompensated. Because lateral bend cannot occur in the spine without vertebral rotation, the ribs are prominent in the thoracic area on the convex side of the curve. This is the most deforming element of the curve and is best seen with the patient bending forward (Fig. 1). Lacking this protrusion of the ribs, lumbar curves are less deforming.

Congenital curves are usually caused by hemivertebrae, and may involve only a few vertebrae, producing a short, sharp curve with minimal deformity. They are occasionally compensated by a second hemivertebra oriented in the opposite direction. Paralytic curves are caused by paralytic diseases that produce an imbalance of the trunk muscles.



Fig. 1. Rib deformity caused by vertebral rotation.

From the Division of Orthopaedic Surgery, University of North Carolina School of Medicine, Chapel Hill.

Request for reprints to North Carolina Memorial Hospital, Chapel Hill, N. C. 27515.

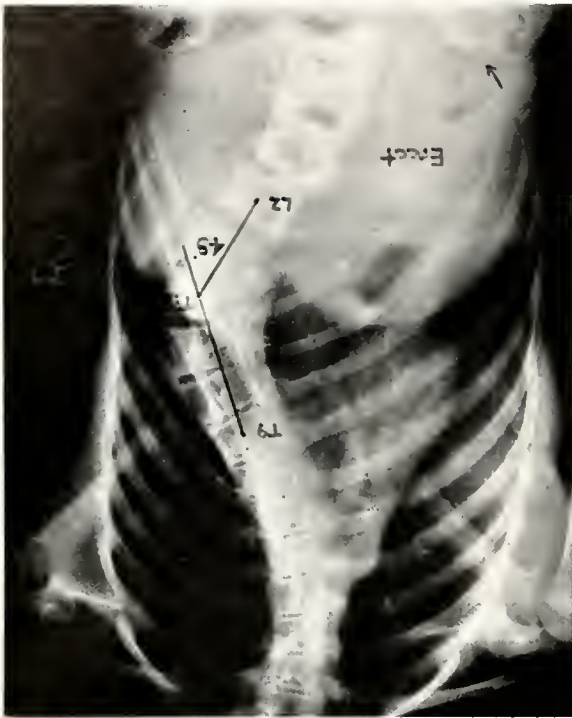


Fig. 2. Method of measuring scoliosis curves. Arrow indicates excursion of the iliac apophysis.

These curves involve many spinal segments, producing a long C-shaped curve. Pelvic obliquity secondary to myofascial contracture often causes or accentuates the deformity.

Roentgenography

Since treatment is directed toward the primary curve, it is important to identify it carefully. When three curves are present, the middle one is the primary curve. Its end vertebrae can be defined on the anteroposterior roentgenogram as those above and below which the intervertebral disc space is wider on the concave side. The central or apical vertebra is that showing the greatest degree of rotation or wedging.

To determine the angular measurement of the curve, intersecting lines are drawn from the middle of the end vertebrae to the middle of the apical vertebra and the intervening angle is measured (Fig. 2). Roentgenograms are usually made in the erect and supine positions, and measurements of the primary curve are made in each. The greater the difference between the measurements, the more flexible the curves and the greater its cor-

rection potential. Curves measuring less than 20 degrees are seldom clinically apparent.

Prognosis

Progression of the curve may be noted as long as the spine continues to grow. The most rapid progression occurs during the period of most rapid growth—adolescence. It has been shown that vertebral growth is complete when the iliac apophysis has completed its ossification from lateral to medial along the top of the iliac crest (Fig. 2). This takes place at an average age of 14 years in girls and 16 years in boys.⁹ Once the apophyseal excursion is complete, the deformity will not progress significantly.

Although pain is rare in childhood, scoliosis predisposes the spine to early osteoarthritic changes, particularly in the lumbar area, so that back pain may be a problem in later life.

Treatment

Not all patients with scoliosis require treatment. Any effective treatment carries the risk of complications and involves a prolonged period of limited activity. The usual indication for treatment is a deformity that is cosmetically unacceptable. In paralytic cases, spinal instability may be benefited by stabilization. The decision for treatment is based, therefore, not on roentgenographic measurement, but on the physical appearance or, occasionally, the functional impairment of the patient.

The appearance of any given patient varies not only with the angular measurement of the curve, but also with the location of the curve, the patient's physique, the number of vertebrae involved, and the amount of rotation present. In general, the higher and longer the curve and the more rotation involved, the greater the deformity. Any deformity, of course, is more apparent in a thin patient.

Nonoperative treatment

Four types of nonoperative treatment have been used, alone or in combination: bed rest, traction, exercise, and cast or braces. Bed rest eliminates the deforming effect of gravity, but is obviously impractical for long periods of time. Traction is effective only while being applied. Exercises are still used

by some; however, while they do perhaps improve posture and help maintain flexibility, they do not have any effect on the progression of the curve. As Cobb has pointed out, an immature girl of 11 who exercises may look better at 16, but not because of the exercises.

The first braces were suggested by Hippocrates, and took the form of padded iron corsets. In the 17th century whale bone corsets were used frequently, and in the late 1880's forcible correction and maintenance by cast became a popular form of treatment. The frequent cast changes necessary with this type of treatment, however, proved tedious to both patient and physician. As a result, cast treatment was often not maintained long enough to obtain permanent improvement.

In the 1940's Blount and Schmidt,² in Milwaukee, developed a brace to provide stability for paralytic spines and to prevent progression in idiopathic scoliosis. Its use was gradually extended to postoperative correction and immobilization, and finally to nonoperative correction. It has now been established that the Milwaukee brace can provide lasting correction, provided it is not removed until vertebral growth has ceased.

This brace provides both traction and lateral pressure while allowing the patient to be ambulatory (Fig. 3). It should be emphasized, however, that although brace treatment avoids the risks of surgery, it is by no means simple. For the brace treatment to be successful, a knowledgeable physician, a skilled brace-maker, an orthodontist, and a cooperative patient are necessary. Complications include skin problems such as allergy or pressure sores, dental malocclusion, and emotional disturbances. Also, since these braces are most effective while considerable growth potential in the spine remains, they must often be worn as long as three to four years. In spite of these drawbacks, the Milwaukee brace is presently the most satisfactory method of nonoperative treatment.

Operative treatment

The first operation for scoliosis was employed by Guérin,³ who in 1839 reported the use of paraspinal myotomy to release what

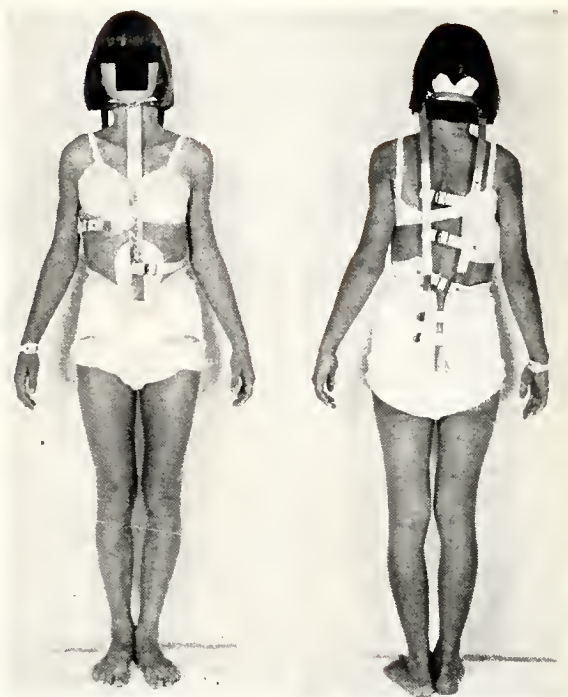


Fig. 3. Posterior and anterior views of the Milwaukee brace.

he felt was the deforming force in scoliosis. The next approach was that of rib resection, first on the convex side of the curve to decrease the rib prominence, and later on the concave side to increase flexibility of the curve.^{4,5} The latter approach has recently been revived by Flinckum.⁶

Perhaps the most important step in the operative treatment of scoliosis was the application of spinal fusion by Hibbs.⁷ Various methods of preoperative and postoperative correction have been utilized with this operation. One of the most effective early methods was the hinge turnbuckle jacket, first used by Risser⁸ in 1920. Hinges were incorporated into a plaster jacket that was then cut so that it might be gradually bent to exert a corrective force on the apex of the curve. Fusion was carried out through a posterior window when correction was complete. The disadvantages of this method were the long period of hospitalization involved, the fact that the patients were not ambulatory during the postoperative period, and the danger of overcorrection. To avoid these problems, Risser⁸ and von Lackum,⁹ in the 1950s, devised ambulatory casts that

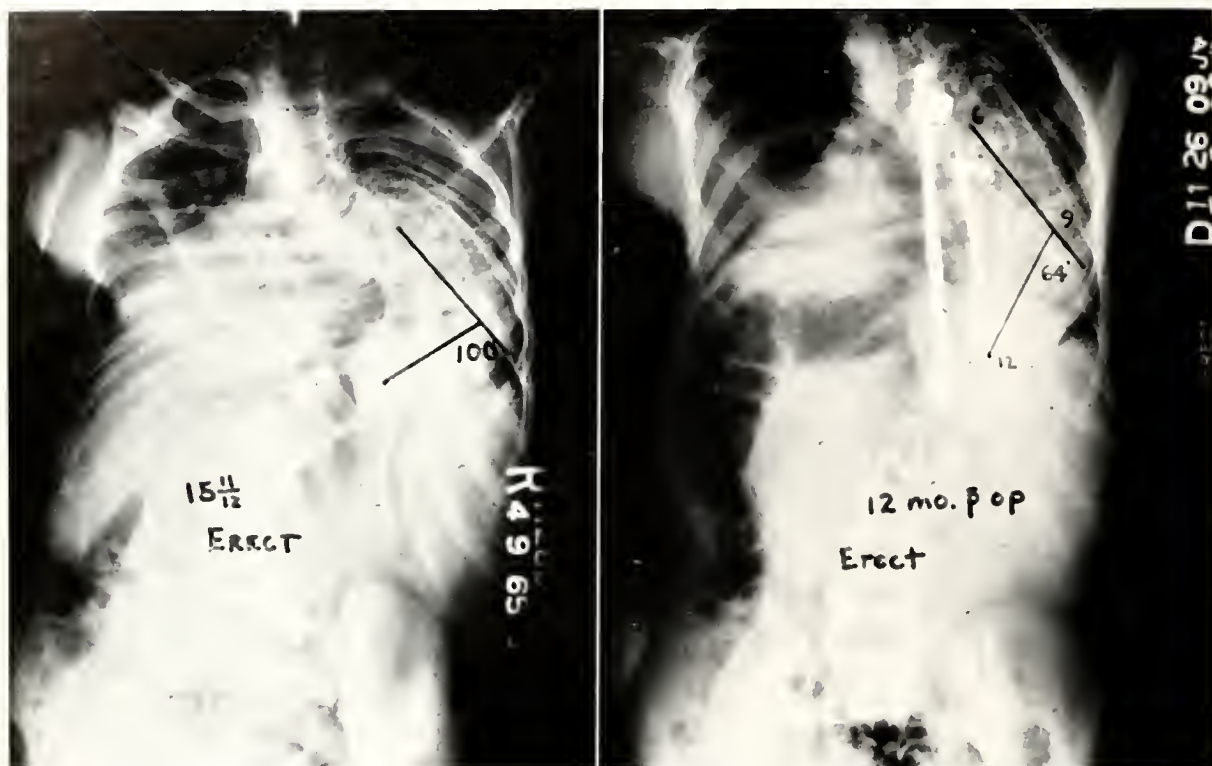


Fig. 4. A (left). Preoperative roentgenogram of severe structural scoliosis. B (right). Postoperative film (same case) after spinal fusion and Harrington instrumentation.

allowed postoperative correction. The Milwaukee brace has also been used for postoperative management.

As more efficient means of correcting the deformity were sought, it was natural that methods of obtaining internal fixation should be devised. One of the first such devices was the "spinal jack" described by Allan¹⁰ in 1955. This device was an angulated rod, forked on each end, that was wedged into the vertebral bodies on the concave side of the curve and then elongated by twisting a central sleeve. In 1958 Gruka¹¹ utilized steel springs attached to the transverse processes on the convex side of the curve to exert correctional force.

In 1962 Harrington¹² published his studies on spinal instrumentation. With this technique, distraction on the concave and compression on the convex sides of the curve are carried out by means of rods spanning these areas (Fig. 4 A and B). The spine is fused and a postoperative cast is applied. Advantages of this method are that it pro-

vides more effective correction, particularly of short fixed curves, and that the period of postoperative external support is reduced. Spinal fusion alone usually requires protection with a cast for about one year. Ambulation is usually permitted for a part of this period. One of the complications of spinal fusion is pseudarthrosis formation, which may cause sufficient loss of correction or pain to require repair. Spinal fusion, often in conjunction with Harrington instrumentation or concave rib resection, is now the most frequently used operative treatment.

At the North Carolina Memorial Hospital, patients with lateral spinal curvature are seen in the Scoliosis Clinic. After an initial appraisal that includes muscle-testing, and cardiorespiratory and roentgenographic evaluation, the patients are observed at three- to six-month intervals, depending upon the rapidity of curve progression. Roentgenograms are taken at each visit. The treatment of each patient is individualized on the basis of consideration of the curve itself, the patient's general condition and temperament,

and the parents' willingness to cooperate in whatever form of treatment is recommended.

Summary

The nonoperative and operative approaches to the treatment of scoliosis are discussed. Cosmetic considerations usually govern the decision to institute treatment. No form of treatment can be expected to provide complete correction. Selection of the method of treatment is based on the specific problems presented by individual patients.

References

1. Risser, J. C., and Ferguson, A. B.: Scoliosis: Its Prognosis, *J Bone Joint Surg* 18: 667-670, 1936.
2. Blount, W. P., Schmidt, A. C., and Bedwell, R. G.: Making the Milwaukee Brace, *J Bone Joint Surg* 40A: 526-528, 1958.
3. Guerin, J. R.: Traite, des Deviations Laterales de l'Epine par le Myotomie Rachidienne, *Gaz Med*, 1839.
4. Le Breton, P.: A Consideration of an Operative Procedure to Increase Flexibility in Cases of Lateral Curvature of the Spine, *Amer J Orth Surg* 4: 315-322, 1907.
5. von Volkman, R.: Resektion von Rippenstrucker bei Skoliose, *Verl Klin Wchnschr* 50: 1889.
6. Flinchum, D.: Rib Resection in the Treatment of Scoliosis, *South Med J* 56: 1378-1380, 1963.
7. Hibbs, R. A.: A Report of Fifty-nine Cases of Scoliosis Treated by the Fusion Operation, *J Bone Joint Surg* 6: 3-37, 1924.
8. Risser, J. C.: Scoliosis, *Amer Acad Orth Surg Instructional Course Lectures*, 14: 91-105, 1957.
9. von Lackum, W. H., and Miller, J. P.: Critical Observations of the Results in the Operative Treatment of Scoliosis, *J Bone Joint Surg* 31A: 102-106, 1949.
10. Allan, F. G.: Scoliosis: Operative Correction of Fixed Curves, *J Bone Joint Surg* 37B: 92-96, 1955.
11. Gruka, A.: The Pathogenesis and Treatment of Idiopathic Scoliosis, *J Bone Joint Surg* 40A: 570-584, 1958.
12. Harrington, P. R.: Treatment of Scoliosis, *J Bone Joint Surg* 44A: 591, 1962.

Comparison of Clear Corneal and Corneoscleral Cataract Incisions

ALAN DAVIDSON, M.D.

L'operation de la cataracte, c'est la section.
TERRIAN.

Daviel described the first systematic method of cataract extraction in 1745. Since then surgeons have tried almost every conceivable type of incision (Fig. 1). The inferior incision was used in the pre-anesthetic era, when the lower part of the cornea was most accessible to the surgeon. It is amazing to me that the early surgeons could accomplish anything without anesthesia, although Beers was able to extract a cataract in 17 seconds.¹ Kuchler's incision is noteworthy. He called it a *Querekstraktion*. Both Kuchler's name and the title he gave his incision make passable English puns.

The incisions of Lebrun and Liebreich were also bold. One wonders what the final visual acuity was in these cases, although it should be remembered that these men were most likely performing planned extracapsular extractions. About the only incision not described was one utilizing the vertical diameter of the cornea.

Read before the Section on Ophthalmology and Otolaryngology, Medical Society of the State of North Carolina, Asheville, May, 1966.

Requests for reprints to Box 250, New Bern, N. C.

Two years ago, in performing two cataract operations on patients with filtering blebs, I was attracted by the neatness, speed, ease of suturing, lack of bleeding, and elegance of the corneal section. The patients did well postoperatively, and I decided to look further into the matter. I found the English-language textbook references from the early 1930s practically devoid of any searching discussion of the advantages of the clear corneal incision. Arruga² briefly lists some of the differences but draws no conclusions:

Limbal Section with Conjunctival Flap

Bleeds not only from the conjunctival vessels, but also from the sclera, especially if the cut has been made behind the limbus.

The sutures are less effective against opening of the wound, but are easier to place.

The sutures are very easy to remove when they do not fall out spontaneously.

Heals more rapidly.

More probabilities of postoperative hyphema.

Corneal Section

Does not bleed, which permits performing the operation without blood in the anterior chamber, except that from the iridectomy.

The sutures are stronger, but require very sharp needles to place them right.

Those sutures which do not fall out are difficult to remove.

Takes longer to heal.

Fewer probabilities of postoperative hyphemia.

Material and Method

With excellent needles and suture materials as well as better instruments available, I decided to use a clear corneal incision in a series of cases. The first operation of this series was done on October 13, 1964, and the last on December 1, 1964.

When it became evident that the clear corneal operations were attended by immediate postoperative reactions and complications much different from those in the corneoscleral cases with which I was familiar, I stopped using the clear corneal incision and went back to the literature on the subject. Again drawing a blank, I decided to analyze and report the series, comparing it with 19 cases in which a corneoscleral incision was used—10 just before and 9 just after the clear corneal series. The operations were performed by the same surgeon on private and service patients, using the same instruments, techniques, and suture material (7-0 B.S.). The following routine was used in all cases:

1. Local anesthesia.
2. Preoperative administration of oral Diamox.
3. Pressure exerted after the retrobulbar anesthesia.
4. Alphachymotrypsin.
5. Bell erisophake. Most of the lenses in the clear corneal cases were tumbled. The open-sky and sliding techniques were used in most of the corneoscleral cases.
6. Air injection.

The two series differed only in the placement of the incision.

In the clear corneal cases the incision was made as follows: A vertical groove was made with a No. 15 Bard-Parker blade half way through the cornea, 0.5 to 1.0 mm inside the limbus, in a 180 degree arc around the upper circumference of the cornea. Five interrupted 7-0 B.S. silk sutures were placed

radially. The groove was deepened by the Bard-Parker blade until the anterior chamber was entered. Then the incision was completed with fine, curved corneal scissors held so that the edges of the wound would be vertical. After the lens had been removed, as many additional sutures were placed as deemed necessary for tight closure. The sutures were removed three weeks postoperatively in 14 cases, and four weeks postoperatively in 5 cases.

In the corneoscleral cases, a 3 to 4 mm limbus-based conjunctival flap was elevated first. Then with a No. 15 Bard-Parker blade a groove was made 0.5 to 1.0 mm from the attachment of the conjunctival flap half way though the corneoscleral tissue in a 180-degree arc of the upper circumference of the cornea. Five McLean sutures of 7-0 silk were pre-placed and others post-placed as needed. The sutures were removed three weeks postoperatively.

Table 1 lists the number of sutures used in the cases. This factor appeared to have no

Table 1

Number	Number of Sutures	
	Clear Cornea Series	Corneoscleral Series
5	4	5
6	9	9
7	5	5
9	1	0

bearing on the postoperative complications or visual results.

Results

Iris surgery

Table 2 summarizes the iris surgery. The most serious immediate postoperative complication—pupillary block glaucoma and iris

Table 2

Procedure	Surgery of the Iris	
	Clear Cornea Series	Corneoscleral Series
One peripheral iridectomy	10	9
Two peripheral iridotomies	2	1
Three peripheral iridotomies	3	6
Sector iridectomy	4	3

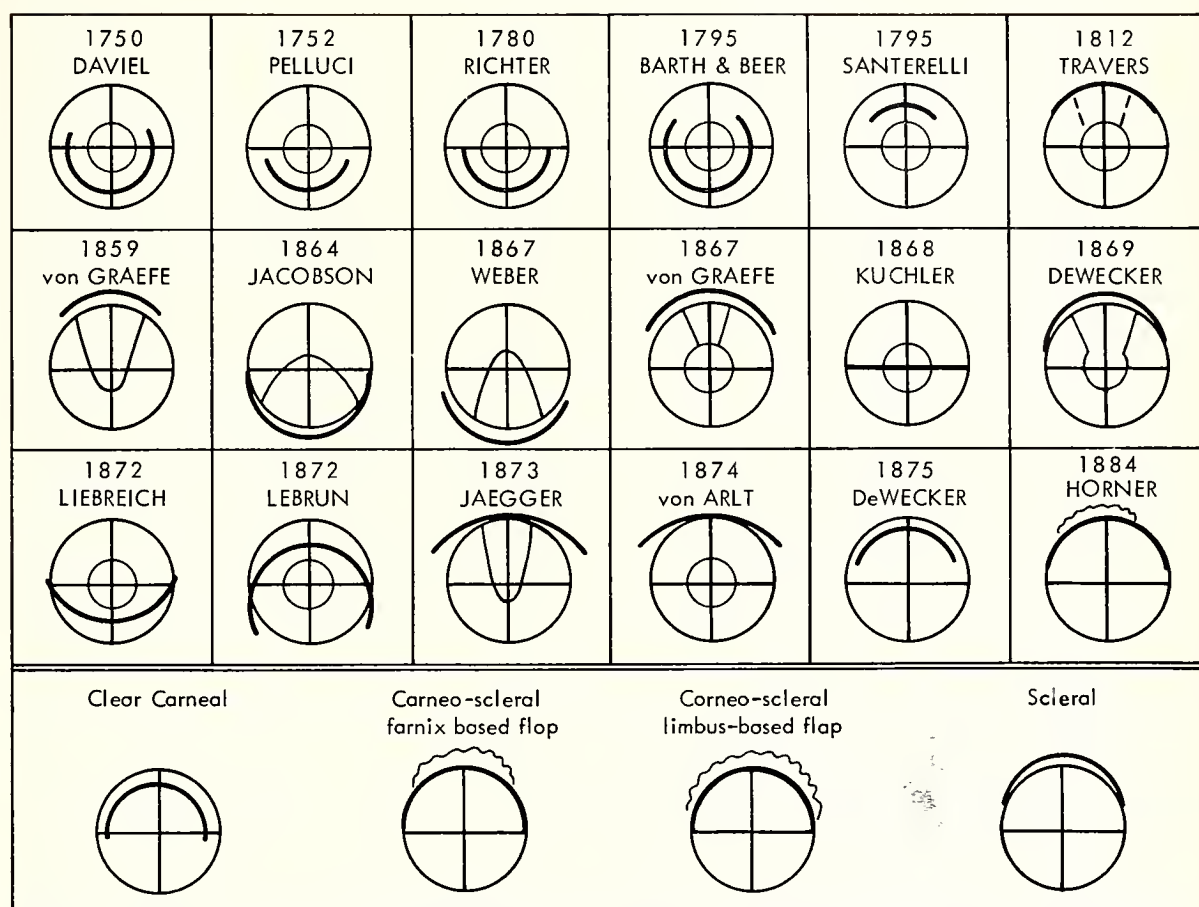


Fig. 1. Types of cataract incisions. Adapted from Beard, C. H.: *Ophthalmic Surgery*, ed. 2, The Blakiston Company, 1914, with the addition of the three most commonly used incisions today.

prolapse—occurred in a patient who had two peripheral iridotomies. Perhaps these iridotomies were not placed far enough in the angle base because of the difficulty in reaching the root of the iris through a clear-corneal incision, although none of the operative reports mentions difficulty in making the iridotomies.

Operative complications

Table 3 lists the problems that arose during the actual procedure. The two capsule ruptures in the clear-corneal cases were the result of too tight an incision. The remnant of capsule was removed with forceps without difficulty.

The loss of vitreous occurred in a 48-year-old woman who had had a severe posterior uveitis about 20 years prior to operation. This caused a complicated cataract, posterior synechiae, iris bombe, and secondary

glaucoma. The glaucoma could not be controlled by maximum medical therapy and the cataract was extracted. Fluid vitreous was lost, but the patient's postoperative course

Table 3
Operative Complications

	Clear Cornea Series	Corneoscleral Series
Capsule rupture	2	2
Loss of vitreous	1	0
Bleeding of the iris	0	1

was uncomplicated and the tension has been under 15 Schiotz units since then. Her vision is 20/400 owing to glaucomatous optic atrophy.

Postoperative complications

It is in the postoperative complications that the two methods of incision differ (Table 4). As would be expected, the two

Table 4
Postoperative Complications

	Clear Cornea Series	Corneoscleral Series
Hyphemia	0	2
Striate keratitis	2	0
Bullous keratitis	1	0
Corneal edema	5	0
Peaked pupil	3	1
Glaucoma	1	0
Flat chamber	1	0
Prolapsed iris	1	0
Poor coaptation	6	0

fifth-day hyphemas occurred in the corneoscleral series. These cleared promptly on conservative management and the final vision was 20/20 in each case.

There was a great difference in the amount of pain and discomfort exhibited. In the clear corneal cases this was not merely a small increase in pain, but a highly vocal type requiring substantial doses of opiates. At first I thought I was dealing with a group of patients having a low threshold of pain, but the phenomenon also occurred in two patients whose other eye I had operated on using a corneoscleral incision. Both of the patients wanted to know what I had done differently!

The other profound difference was in the healing of the wound. The cornea appeared more edematous in all clearcorneal cases. In six cases poor coaptation and distortion could be seen by the naked eye. Under the slit-lamp they appeared terrifying! In the last five cases the sutures were left in for four weeks without discernible difference. In one case a bullous keratopathy developed over the upper third of the cornea, which cleared spontaneously in ten months.

There was no leakage from the wounds, since the only flat chamber was the result of pupillary block glaucoma and a prolapsed iris occurring 11 days postoperatively.

Peaked pupils due to corneovitreous adhesions occurred in three cases as opposed to one in the limbal group. I think this difference may have been due to the fact that all the lenses in the clear corneal series were tumbled.

The flat chamber, pupillary block, and iris prolapse all occurred in the same patient 11 days after the original operation.

The prolapse was excised and additional sutures were added. A fornix-based flap was pulled down to cover the incision. The patient died six weeks after the cataract extraction from urinary tract hemorrhage caused by two huge staghorn calculi; she had refused renal surgery. Obviously, no follow-up was possible. Poor wound-healing may have been due to her poor general condition.

Astigmatism

Table 5 lists the amount of astigmatism. In the clear corneal cases, four weeks postoperatively I found myself dealing with 7 to 9 diopters of astigmatism. The retinoscopic reflex was so bizarre as to be useless. Manifest

Table 5
Astigmatism

	Clear Cornea Series	Corneoscleral Series
None	2	8
0-1 diopters	2	7
1.25-2.0	9	2
2.25-3.0	5	2

refractions were a waste of time, but the keratometer was a godsend. With it the axis could be accurately determined and the power fairly accurately determined; therefore, the refractionist had a starting point. In one patient I was able to correct 9 diopters of astigmatism to 20/40. Over the months all of the distorted corneas improved—one from 9 to 2 diopters; one from 5 diopters to 1; so the prognosis is not entirely bleak. Many of the mire images were distorted, and some still are.

Visual acuity

The large degree of astigmatism accounts for the generally poorer final visual acuity of the clear corneal group of patients, although they have steadily improved with time. The patient with 20/100 and another with 20/200 vision have macular edema due to a corneovitreous adhesion, and are scheduled for further surgery. In one case the 20/200 vision is due to a hole in the macula. The patient with 20/400 vision has glaucomatous optic atrophy.

In the corneoscleral series the patient with 20/50 vision had two filtering bleb operations prior to cataract extraction, and has

Table 6
Final Visual Acuity
Clear Cornea
Series

	Clear Cornea Series	Corneoscleral Series
20/15	3	1
20/20	1	8
20/25	7	4
20/30	1	2
20/40	2	1
20/50	0	1
20/60	0	0
20/70	0	1
20/100	1	0
20/200	2	0
20/400	1	0

some choroidal sclerosis and macular degeneration.

The patient with 20/60 vision has choroidal sclerosis and macular degeneration. Her visual acuity was improved from 20/400.

The patient with 20/80 vision is blind in the right eye and has central chorioretinitis in the left. Improvement in visual acuity from 20/300 to 20/80 has pleased him so much that he wants to have the right eye operated on.

Table 7 is a synthesis of my experiences with the two incisions, combined with opinions gleaned from the literature. The most serious disadvantage of the clear corneal incision performed with modern suture material, instruments, and keratoplastic surgical technique is the development of corneo-

vitreous adhesions. This complication caused poor vision in two of three cases. I was spared the serious complications of epithelial downgrowth, leaking wounds, infection, and permanent bullous keratopathy. Perhaps this was due to the surgical techniques and suture material. Corneal distortion prolongs the postoperative course and is a source of anxiety for both patient and physician. In some of these cases I was not sure that the wound would not disrupt for three months. The degree of astigmatism present makes it much more difficult to fit contact lenses.

Discussion

The English-language literature from the early 1930s to the recent past does not discuss the different results obtained with the clear corneal and corneoscleral incisions and thereby warn the unsuspecting surgeon of the trap that lies ahead. But a review of the literature before the First World War discloses that authorities of that generation wrote as extensively about incision placement as the present generation of ophthalmic surgeons writes on suture material, methods of suture placement, and methods of achieving intracapsular extraction.

In his fine history of cataract surgery in 1914, Beard has this to say in discussing the Smith Indian method." The incision "... nec-

Table 7
Advantages and Disadvantages

	Clear Corneal Incision	Sclero-corneal Incision
Surgical technique	Neat. No bleeding. Easy to suture. Quick. Elegant.	Much more fussy
Postoperative pain	Severe	Bleeding. Slow.
Hyphemia	None	Much less
Filtering blebs	None	Some
Healing	Poor	Some
Corneovitreal adhesions	More	Good
Infection	More	Less
Epithelial downgrowth	More	Less
Striate keratitis	Much more	Less
Corneal edema	More	Less
Astigmatism	More	Less
Contact lenses, postoperative	Harder to fit	Easier to fit
Return of useful vision	Much later	Earlier
Patient morale	Harder to maintain	Easier to maintain
Final visual acuity	Poorer	Better
Surgery for postoperative complications	More difficult	Less difficult

essitates a very extensive, wholly corneal section conducive to slow healing, iris incarceration, imperfect coaptation and cicatricial distortion of the corneal curvature."³ And in a rather flowery style he describes A. von Graefe's experiences in cataract surgery:

At the early age of thirty he had sounded the depths and shallows of the two methods of linear and flap extraction. He recognized their respective failings and advantages. From the suppurations and lack of coaptation of the flap extraction he sought refuge in the more prompt healing of the linear incision placed in the sclera. . . . Graefe succeeded thus in making a perfectly coapting and quickly healing incision which greatly reduced the frequency of infection.⁴

And finally Beard summarizes his opinion:

The grave faults of those sections lying well within the transparent cornea are want of coaptation, contact with the pupillary border of the iris while the anterior chamber is empty, causing the iris to become entangled, slow healing from being far from the blood supply (liability to infection), and high degree of astigmatism in cicatrization.⁵

From this time until 1964 there was little written except to advise clear corneal section in patients with bleeding tendencies and filtering blebs. In 1964 Barraquer, Troutman and Ruttlan, in their text "Surgery of the Anterior Segment of the Eye," discuss the relative merits of the two incisions and go so far as to advise against clear corneal incisions even in cases with filtering blebs.⁶

In 1966 McLean, in the "Symposium on Cataracts," almost paraphrases Beard:

The farther forward the incision is in the cornea the less liable it is to bleed. The factor alone has guided many surgeons to place all incisions in clear cornea. Such a technique is very neat, and when all goes smoothly, it is most satisfactory. However, when difficulties occur it is far from ideal and it limits the

maneuvers that can be used. The iris root is inaccessible and the upper pole of the lens is hard to grasp for a sliding delivery. Vitreous, if it presents may be difficult to manage and any post-operative iris incarceration is, of necessity, exposed. Late adherence of the hyaloid membrane or iris to the back of the wound is more likely to occur with all its attendant complications. Corneo-corneal sutures too are likely to be more irritating and firm healing may be slower. One less layer of tissue is available against post-operative contamination.⁷

Singh and Gupta, in 1965, arrived at conclusions almost identical with mine.⁸

Summary and Conclusion

A comparison is made between clear corneal and corneoscleral sections in cataract surgery. The study is based on two small series of operations performed by the same surgeon. The two methods of incision are presented and discussed together with the literature on the subject.

To use a clear corneal incision is to open a Pandora's box of postoperative complications, the worst of which, in this series, was the corneovitreous adhesion. The postoperative care is more difficult, time-consuming, and prolonged. More postoperative visits are required. Patient morale is low. The final visual results are poorer, although with time the corneal astigmatism has diminished.

References

1. Snyder, C.: Our Ophthalmic Heritage, Arch Ophth 75: 545-547 (April) 1966.
2. Arruga, H.: Ocular Surgery, translated from the third Spanish edition) New York, McGraw-Hill Book Co., 1953.
3. Beard, C. H.: Ophthalmic Surgery, Ed 2, Philadelphia, P. Blakiston's Sons & Co., 1914, p 574.
4. *Ibid.*, p 610.
5. *Ibid.*, p 615.
6. Barraquer, J., Troutman, R., and Ruttlan, J.: Surgery of the Anterior Segment of the Eye: vol 1: General Considerations and Intracapsular Cataract Extraction, New York, McGraw-Hill Co., 1964, p 104.
7. McLean, J. M.: Symposium on Cataracts, Trans New Orleans Acad Med, St. Louis, C. V. Mosby Co., 1965, p 65.
8. Singh, R. T., and Gupta, M. P.: Incision in Cataract Surgery, J Indian Med Assoc 44: 178-181 (Feb 16) 1965.

THE RIGHT TO PRESCRIBE—RIGHT

This gets down to the really basic controversy, where one exists, between physicians and welfare agencies on drug costs. We are willing, indeed we are anxious to prescribe the economical way—but it has to be the **right** drug. It is when we are denied the opportunity to provide for patients the proper drug for their treatment, simply on a basis of cost, that we rebel.—Burtis E. Montgomery, M.D., in *Illinois Medical Journal*, (128:614), December, 1965.

Another Round on Squares

MARILYN M. BENSON

I have been asked to speak on a subject of mutual interest to physicians and their wives, so perhaps my title, "Another Round on Squares," surprises you. You are probably expecting to hear me discuss what a valuable ally the Auxiliary is, and the need for more and better cooperation between your two organizations. And, in a way, I shall, for it is my belief that the physician who takes an interest in his local medical society, and the physician's wife who promulgates voluntary community service, are some of the few squares left in our changing, scrambling world. And the preservation of both, I believe, is tantamount to the survival of all America, for they are among the few who refuse to let someone shoulder the burden and assume the responsibility. But why do I call them squares?

Several months ago I read an article by Mr. Charles Brower, a New York advertising executive. It is a most thought-provoking article and I shall quote from it liberally, for I want to share his thoughts with you. He had this to say:

We have become so well-to-do as a nation that we have a guilt complex about it. Conformity is sweeping the country. And, while more and more people want seats in the grandstand, fewer and fewer want to sweat it out down on the field. More and more youngsters who come in looking for jobs are asking, "What can you do for me?" rather than "What can I do for you?" They want to discuss the extras they're going to get. They want to know how cool it will be in summer and how warm in winter . . . and how safe at all times of the year.

When they go to work, they hasten to hide their light in the security of a committee, because there is safety in numbers. The progress may be slow, and the glory may be small, but the work is oh so steady. Their eyes are on the clock rather than on the calendar. The coffee break is more important than the Big Break.

Read before the Conference of County Medical Society Officers and Committees, Medical Society of the State of North Carolina, Pinehurst, January 28, 1967.

From the Communications Division, American Medical Association, Chicago.

Request for reprints to 535 N. Dearborn Street, Chicago, Illinois 60610.

It seems that others share Mr. Brower's viewpoint, for recently a priest who specializes in working with youth commented, "If a call to the barricades were issued today, most of our young people would first ask, 'What effect will this have on my personal goals?'"

Delving further into the problem, Mr. Brower pointed out that there was a time when the word "square" was one of the finest in our language—but this was before the time when "going to your eternal rest" meant getting a job with the government.

You gave a man a square deal if you were honest. You gave him a square meal when he was hungry. You stood foursquare for the right, and square against everything else. When you got out of debt, you were square with the world, and that was when you could look your fellow man square in the eye.

Somehow, this honest, wholesome term has changed. It's been twisted and scratched, dented and tarnished.

Today, everyone knows what a square is. He is the man or woman who never learned to get away with it . . . who volunteers when he doesn't have to . . . who laughs with his heart instead of his upper lip . . . a slob who still gets choked up when he hears a band play "The Star Spangled Banner." He even knows the words!

There are squares in medicine, too. Physicians who are so wrapped up in what they are doing that they have no need for special titles or privileges . . . who want only the opportunity to practice medicine. They not only attend the medical society meeting—they contribute something to it. And their wives—they're square, too. They spend their afternoons raising funds to help put tomorrow's physician in school today. They staff a diabetes detection center instead of playing bridge, and they hold the unusual belief that they can accomplish more in their hometowns than any edict from Washington—and do it quicker and better.

It's too bad that squares in this country

aren't thriving too well these days. They don't fit in with the current crop of angle-players and corner-cutters, because they're burdened down with old-fashioned ideas of honesty, loyalty, courage and responsibility. They—and all the rest of us—are living in a country that today is quite different from the one we were taught to love as children.

We have come a long way, as Brower so aptly commented, since Theodore Roosevelt told us: "Far better it is to dare mighty things; to win glorious triumphs; even though checkered by failure, than to rank with those poor spirits who neither enjoy much nor suffer much, because they live in the gray twilight that knows not victory or defeat."

Our country's ideas have changed—or perhaps, we are not creating ideas anymore. We used to. We created and sold to others the idea of individual dignity, responsibility, and freedom. We created the idea of government of the people, by the people, and for the people—all the people, and the idea that those who are taxed should be represented.

Today, though, we seem to be buying the ideas of others—the idea of strong government for a weak people, the idea of "Let Jack Do It." And with these ideas came the complacent smile, and the shrugged shoulder.

We've even imported a new way of speaking these days—talk that tears down. Never building up. Always knocking and belittling. Someone once asked Elizabeth Bentley, a well-known, active communist at one time, why she became a communist. Her reply was, "I can't remember during all my education hearing anybody stress or emphasize the good about my country. I heard about the bad—the slums, the lack of housing or schools or health, but I can't remember anybody pointing out and emphasizing the good in the American system, and especially *this* good: that under this system, we can do something about the bad things, and if we lose the system because we don't understand it, then we can't do anything about the bad things."

Toynbee, the historian, says that of 21

notable civilizations, 19 perished not from external conquest but from evaporation of belief within. And when we laugh at jokes about our national heroes and sneer at their ideals, are *we* far from this evaporation point?

I, for one, think we need those heroes. This, of course, marks me as square. If it does, I'll be in good company, for this country was discovered, put together, fought for and saved by squares. It's easy to prove that they were squares, too—by simply imagining what some of them might have said if he had *not* been a square.

Paul Revere: What do you mean—me ride through every Middlesex village in the middle of the night? Why me? Am I the only man in Boston with a horse?

John Hancock: I know you've written this declaration, Tom, but get some of the other boys to sign it. I've got some influential customers that might not understand if my name were on it.

Patrick Henry: Sure, I'm for liberty, first, last, and always. But let's be realistic. We're still a pretty small outfit. If we start pushing those British around, someone is going to get hurt.

Nathan Hale: Me spy on the British? Are you kidding? Do you know what they do with the spies they catch? I'll give you a flash, chum. They hang them.

It is perhaps a significant fact that what these men actually did say has been quietly deleted from our schoolbooks in the last 40 years. Instead of appointing committees to decide where we as a nation are going, we might do well to form a commission on heritage, to make sure that some of us at least remember where we've been!

It might also be well to go back to our old beliefs in such things as pride, initiative, patriotism—and even hard work. It would also be well for us to start the trend moving . . . to start caring enough . . . to start being squares. Too many of us don't dare to be square, because the opposite of square is round and being round is so much simpler. Responsibilities and problems roll off easily, and we don't have to make any personal sacrifices that way.

And while we're talking about personal sacrifices, perhaps we could make a few nominations of our own for a new kind of award—the Medical Square Award. How do we know that our nominees are truly deserving and basically square? By applying the test we used earlier—by imagining what they might have said if they had not been squares.

"Doctors, I am honored that you want me to serve another term as your delegate, but I really cannot do it now. Oh, I believe our state should have active spokesmen, and I'll be happy to do what I can here at home. But, gentlemen, I've got an active practice—I'm a family physician, you know, And besides, I'm still serving on the Joint Commission, and working in the Academy of General Practice. Besides, I'm getting to the age where I'd like to do some fishing and rocking."

A square? Yes, Amos Johnson fits that classification, as does his wife and Virginia Robertson and Frank Jones and many of you here. . . and we can thank God for it. Here are men and women who are not content to roll down the path, staying in the middle where the most comfortable ruts are.

Too many of us know the short-cuts . . . and they are all labelled "non-involvement." Too few of us know or care where the path leads. After all, it runs right by our door. It's convenient, it's quick, and it is oh so smooth. Too few of us dare leave the path, because it is the way most people go. We want the universe paved like the street we live on.

Why should *we* be different? Because there is no path to the future, no path to greatness, no path to progress.

Almost two hundred years ago, our country fought for its independence. How shall we fight for our personal independence today?

Personal independence is a matter of in-

dividuality. It is being *for* participation in a cause and against sitting life out; *for* the direct and against the devious; *for* the honest way and against the short; *for* building and against tearing down. But most of all, it is simply being for what you believe and backing up your beliefs with action. It is, if you will, seizing the opportunity to be an example to those about you.

"A time like this demands strong minds, great hearts, true faith and ready hands. Men whom the lust of office does not kill. Men whom the spoils of office cannot buy. Men and women who possess opinions and the will to express them. Men and women who will not lie . . . who can stand before a demagogue and damn his treacherous flatteries without winking. Tall men, suncrowned, who live above the fog in public duty and private thinking. For while the rabble, with their thumb-worn creeds and their little deeds mingle in selfish strife . . . lo . . . freedom weeps."

Yes, we need more squares . . . and for their creed consider this, as Dean Alphonese said it:

"I do not choose to be a common man or woman. It is my right to be *uncommon* if I can. I seek opportunity, not security. I do not wish to be a kept citizen, humbled and dulled by having the state look after me. I *want* to take the calculated risk . . . to dream and to build . . . to fail and to succeed. I refuse to barter incentive for dole. I prefer the challenges of life to the guaranteed existence . . . the thrill of fulfillment to the stale calm of utopia. I will not trade freedom for beneficence, nor my dignity for a handout. I will never cower before my master, not bend to any threat. It is my heritage to stand erect in a crowd, unafraid, to think and act for myself, enjoy the benefits of my creation and to face the world boldly and say, 'This, with God's help, I have done.'"

Surviving in Today's Society

DAVID GOE WELTON, M.D.

In today's complex society the physician rendering individual medical service, caught in the swift currents of social change, is finding it more and more difficult to function in a manner which he believes is best for the patient. The tidal wave of medical legislation unleashed by the 89th Congress finds him inadequately prepared to survive in a sea now seething with waves of new directives and regulations as well as oncoming programs of titanic proportions.

In a teaching medical center a problem of such scope and significance probably would be assigned to a faculty committee or to a research "team." (Indeed, this might be fruitful! Research is needed.) In the government, another department or commission would be established; in the military, a "task force." The practicing physician is faced with the necessity of doing this pretty much on his own, and in conjunction with organized efforts of his county and state medical societies. Are there some dependable guidelines for him in this endeavor? I believe there are.

Educate

The first step to survival, I suggest, is to become fully informed. Study the medical legislation which was enacted by the last Congress, plus that which is now pending and being introduced—not only in Congress but in the State Legislature as well. Granted, this is no easy task. It means taking more time away from the care of patients and scientific study. Remember, though, that the proponents of these many programs have worked on them full time for years, and they are increasing their efforts now in order to extend and expand them. Too often, by the time we learn about a new program or proposal, it is about to be voted on by the legislators, or has already been enacted. We simply cannot afford to be ignorant about these matters.

In range of activities and output the 89th Congress has never been exceeded in peace time. More than 16 thousand bills were introduced; 800 were enacted. A total of 1,140 bills affecting the practice of medicine, medical care, or the public health were introduced. Forty-three of these were enacted—more than during any previous session of Congress.

Physicians are familiar with the most controversial of these, Title 18 of Public Law 89-97, commonly known as Medicare. This law covers approximately 10% of our population; these people require about 20% of all medical services. In some instances, of course, more than 20% of a physician's patients may be over 65; in other cases, such as a pediatrician's, none. Title 19 of this same law, however, may ultimately cover a much larger segment of the population—as much as 35%, according to some estimates. This will depend on how it is implemented by the individual state legislatures.

Additional new laws include:

1. Regional programs for heart disease, cancer and stroke, P.L. 89-239.
2. The comprehensive Community Health Services Planning Act, and Public Health Service Amendments, P.L. 89-749. Among other things, this grants the Public Health Service an unprecedented excursion into the field of private practice.
3. The Economic Opportunity Amendments of 1966, P.L. 89-794, which authorizes the establishment of neighborhood health clinics.
4. The Appalachia Regional Development Act, P.L. 89-4, which involves portions of 12 states. The Secretary of HEW is authorized to make grants for the construction (up to 80% of this cost), equipment, and operation of multi-county demonstration health facilities, including hospitals, regional health, diagnostic and treatment centers, and other facilities necessary to health. One hundred per cent of operating costs for the

first two years is provided, and 50% for the next three years.

These are but a few. News laws have been introduced or amendments made in existing laws affecting control of drug abuse, community health services, health research facilities, air pollution, educational assistance for the health professions, medical library assistance, demonstration cities, and more.

Among the bills already introduced to the 90th Congress are: S. 260, the Medical Restraint of Trade Act, commonly known as the Hart bill; S. 513, the "Preventicare" bill; and numerous amendments to P.L. 89-87, the Medicare law.

Detailed information about all of these may be obtained from your Senator, your Representative, and the legislative chairman of your county and state medical societies.

The scope of all this legislation is far greater than is generally recognized. The prediction that "the future of the private practice of medicine will be determined in our legislatures" has come true.

Participate

The second step to survival, I believe, is to participate. This is really part of our obligation as citizens. During the past 20 years more and more physicians have taken some time away from their busy practice in order to participate in efforts to preserve this heritage of private practice and the doctor-patient relationship as we have known it. Some have taken the plunge into politics by running for public office. A few have succeeded. These men are to be commended for their sacrifice and for the service they are rendering. Since most physicians are unable to do this, how can the great majority participate most effectively?

First, by supporting good candidates. This may be done by individual or group endeavor, such as through a political party or a medical society. It can be done even better by engaging in both types of activity.

Second, by participating actively in professional societies, especially at the county and state levels.

This takes time and money, granted; but

influencing legislators and legislation is not a simple, one-shot matter. It is a complex and delicate undertaking which requires, among other things, a broadly informed interest—not confined to medical matters—sustained over a long period of time. Medical care is no longer the private province of the physician and the health team. The government has moved in . . . to stay. More groups are demanding that their health needs be *guaranteed* by legislation.

So, things have changed, and the pace and extent of continuing changes sometimes leaves us behind. While medical and scientific progress is a basic part of the heritage of American medicine, the fact is that we are not equally prepared for, nor geared to, the rapid sociological changes now upon us.

Philip Lesly, a nationally recognized public relations authority, has stated: "It is the paradox of our times that the more any group advances in mastery of its own field, the more certain it is to get out of touch with the rest of the population . . . In every field, as the subject matter becomes more extensive and complex, two things happen: (1) it requires greater effort by the practitioner to master and keep abreast, and (2) it becomes less understood by outsiders."

Alfred N. Whitehead explains that "The *art* of progress is to preserve *order* amid *change*, and to preserve *change* amid *order*."

Communicate

Good public relations has been defined as a combination of high quality *performance* with effective *interpretation*. Today high quality performance by the medical profession is taken for granted. The public expects it, as a result of the progress and performance which has been achieved. Effective *interpretation* is another matter, in need of continuing improvement, and this means better communication. You may be tired of this word, but we can't escape its importance. Good communication is not as easy to achieve as it used to be. As Mr. Lesly put it: "The North American audience for our communications has developed into more segments than ever before. There is less mass attitude and more special attitudes." We

have minority groups by the dozen, each one requiring a different approach.

This, then, is primarily the job of the "pro" in this field, and he can show us how to be more effective at the local, state, and national levels. However, when we remember that medical public relations begins in the physician's office, we realize that what happens there cannot be changed or undone by an outside expert or agency. The cornerstone is still a sincere dedication to service to the individual and to the community.

While there is nothing new about these proven steps to better patient and public relations, the need to maintain and strengthen them has never been greater. I mean such things as discussing fees with patients before services are rendered, and maintaining accurate and reasonable billing and credit practices. Add county medical society activities such as an emergency and information service, a committee to work with the communications media; a grievance or mediation committee; support of a good medical library, and similar services as a professional group—in short, community involvement, individually and collectively.

These remarks are not intended to be discouraging. After all, we have a lot "going for us" as a profession, such as:

1. Tremendous medical progress has been made just during our own short careers, and this progress promises to continue at an even faster pace.

2. Our prestige as a profession is still high. Pollster Louis Harris, in a recent sur-

vey, found physicians credited with the highest "confidence score" of all the professions. (Bankers, scientists, military leaders were next, in that order.)

3. Our product is in great and increasing demand.

Summary

Three steps necessary for survival in today's society are: educate, participate and communicate. You should:

1. Be as fully informed as possible, not just on medico-scientific matters, but on community problems and social changes. Stay alert. As Satchell Paige remarked: "Don't look back. Something might be gaining on you!"

2. Become involved in relationships with your community leaders, planners, and legislators. Find out what they are thinking and why. Participate in your county and state medical societies. If you don't like the way they're being run, get in there and help to improve things.

3. Improve communications with your own patients and with the public. Do everything possible to maintain and strengthen the doctor-patient relationship.

"In a world of explosive change, no organization or profession can afford to be complacent or stable; it must be fluid, alert to new trends, and able to adjust."

This is the challenge facing us now. How we meet it may well determine our future.

Air, as well as water, takes up parts of most bodies with which it comes into contact, and is often so replenished with those of a noxious quality, as to occasion immediate death. But violent effects seldom happen, as people are generally on their guard against them. The less perceptible influences of bad air prove more generally hurtful to mankind. . . —William Buchan, M.D.: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, etc. Philadelphia, Richard Folwell, 1799, p 67.

North Carolina Medical Journal

Owned and published by
The Medical Society of the State of North Carolina,
under the direction of its Editorial Board.

Wingate Memory Johnson, M.D.
Founding Editor (1940-1963)

EDITORIAL BOARD

Robert W. Prichard, M.D., Winston-Salem
EDITOR

John S. Rhodes, M.D., Raleigh
ASSOCIATE EDITOR

Miss Louise MacMillan, Winston-Salem
ASSISTANT EDITOR

Mr. James T. Barnes, Raleigh
BUSINESS MANAGER

W. McN. Nicholson, M.D., Durham
CHAIRMAN

Ernest W. Furgurson, M.D., Plymouth

John C. Reece, M.D., Morganton

Robert A. Ross, M.D., Chapel Hill

Charles W. Styron, M.D., Raleigh

Address manuscripts and communications regarding
editorial matter to the

NORTH CAROLINA MEDICAL JOURNAL

300 South Hawthorne Road, Winston-Salem, N. C. 27103

Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 203 Capital Club Building, Raleigh, N. C. 27602. All advertisements are accepted subject to the approval of a screening committee of the State Journal Advertising Bureau, 510 North Dearborn Street, Chicago, Illinois 60610, and-or by a Committee of the Editorial Board of the North Carolina Medical Journal in respect to strictly local advertising accepted for appearance in the North Carolina Medical Journal.

Instructions to authors appear in the January and July issues.

Annual Subscription, \$5.00

Single copies, \$1.00

Publication office, Progress Printing Co., Inc., Box 175, Fuquay-Varina, North Carolina 27526.

APRIL, 1967

SOMETHING NEW ON FISH AS FOOD

In the September, 1966 issue of "Nutrition Today" Dr. Herbert Hartley, editor of *Northwest Medicine*, discusses the work of Dr. Lauren Donaldson in breeding fish which mature more rapidly and produce more offspring than their wild relatives. (His pictures and text on rainbow trout drive an angler to distraction.) One of Dr. Donaldson's more recent findings is that fingerlings given an autolysate of whole fish grow twice as fast as those on other diets. The autolysate is prepared by allowing whole hake

(a fish related to cod) to digest itself under controlled conditions of temperature and pH. Donaldson feels that such a food has unique properties, which in turn come from certain nutritional advantages enjoyed by salt water fish. He points out that the salt water fish has in its environment a complete selection of minerals, from which its body can select whatever it needs, while terrestrial animals are bound to the mineral content of the soil and water around them, which may or may not be adequate. By feeding autolysed fish, one presents a well-balanced foodstuff, not just in terms of protein content, but minerals as well. Current interest in possible adverse cardiovascular effects of soft water demonstrates that we do not know all we need to know about mineral metabolism. A vitamin supplement, in the form of rice hulls and wheat germ, is added to the food.

North Carolina has a stake in any industry based on the ocean. There is growing interest in the sea as a source of food, even now before necessity drives us to it, as it likely will do one day. If it can be shown that certain foods derived from ocean fish have unique properties, the growth of sea food culture may accelerate. We need to keep an eye on these developments, both as physicians and as North Carolinians.

* * *

ROCKY MOUNTAIN SPOTTED FEVER

The statistical observation that a disease is uncommon is of no interest to the patient with that disease—it constitutes his problem 100%. So it is that we devote space to Rocky Mountain spotted fever even though most of us will not see a case this year. As the number of spot-producing febrile diseases declines, diagnosis might get easier, the recent anti-measles campaigns in the state helping reach that end. The combination of the time of year, the affinity of children for the woods, and of ticks for the children in the woods, makes it time we keep RMSF in mind when a hot, spotted child appears for diagnosis and treatment. And having read the article by Garbee and Kelsey, we can help advance medical knowledge by getting a platelet count on these children, and of

course confirming the results of that count by looking at the blood film and observing the time it takes the patient's blood clot to retract.

* * *

WHAT WILL HAPPEN TO PHARMACY?

The dean of the University of Michigan Medical School, Dr. William Hubbard (a North Carolinian in his youth), has raised some interesting questions about the future of pharmacy. In addressing a conference on pharmacy, medicine and nursing, he described pharmacy as being either the most underutilized or most overtrained of all the health professions. Largely because manufacturers today do much of what pharmacists did themselves in the past, compounding is a minor part of the work, and he questions whether the rebottling of prescription drugs and passing them across the counter is still part of the ethical profession.

In connection with the responsibility of a profession to provide leadership, Hubbard suggests that pharmacists consider what they want to be in the future. Some matters he presents for consideration are whether the pharmacist should serve as a censor in drug dosage matters, or act as an adviser on patients. In both instances many other questions are raised. Pointing out that hospital pharmacists have become increasingly important, he cautions that only 20% of pharmacists serve in such a capacity. Should pharmaceutical education be pointed toward hospital or community pharmacies?

The medical profession cannot stand by mutely while pharmacy debates these matters. The two professions have always had

major common concerns, and this JOURNAL has devoted space to them as needed, an example being the address of Mr. McAlister to the First North Carolina Conference on Medicine and Pharmacy (26:62-66, February, 1965). Since we have a School of Pharmacy at the University, local interest is heightened all the more. If the question raised by Dean Hubbard concerning the pharmacist as an "adviser" to patients is taken up seriously, physicians and the licensure boards of both professions will have much work to do. Certainly such a role has a grounding in tradition, and its expansion cannot be ruled out, in the light of current efforts to increase the kinds of people who take responsibility for patients in some respect. It is best that we think about these matters and stand ready to help our fellow professionals when called upon to do so.

* * *

MAY MEETING IN PINEHURST

For those who have been members of the Society for a number of years there will be some nostalgic quality about the 1967 meeting, as it returns to Pinehurst. For newer members it offers a fine setting for the professional and social aspects of the annual gathering. For all of us the meeting is an important time to get information about strictly medical matters, as well as the latest news from the legislative and socioeconomic fronts, which have loomed so importantly over the practice of medicine in recent years.

The officers of the Society hope the program will meet the expectations of the membership, and look forward to seeing you in Pinehurst next month.

In great cities so many things tend to contaminate the air that it is no wonder it proves so fatal to the inhabitants. The air in cities is not only breathed repeatedly over, but is likewise loaded with sulphur, smoke and other exhalations, besides the vapours continually arising from innumerable putrid substances, as dunghills, slaughter-houses, etc.—William Buchan, M.D.: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines, etc.*, Philadelphia, Richard Folwell, 1799, p 68.

The President's Message

ON CERTAIN ELEMENTS OF ETHICS

Chapter XIII, RULES OF CONDUCT—By-Laws of The Medical Society of the State of North Carolina:

"The principles set forth in the Declaration of the Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public."

The material which follows is for information and is placed in the *North Carolina Medical Journal* as a part of the President's message because from time to time, due to changing patterns, various interpretations of the Principles of Medical Ethics are made by the Judicial Council of the American Medical Association. This is being written on April 1, 1967, and reflects statements and official opinions as of that date in one selected area of ethical consideration. The writer has reserved the right at the conclusion of the factual portion of this presentation to voice certain *personal* opinions. These opinions do not reflect the official opinion of The Medical Society of the State of North Carolina.

PRINCIPLES OF MEDICAL ETHICS

"In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay or receive a commission for referral of patients. Drugs, remedies, or appliances may be dispensed or supplied by the physician provided it is in the best interest of the patient."

EXTRACTED COMMENTS OF THE JUDICIAL COUNCIL UNDER SECTION VII AND NUMBERED AS TO SUBJECT UNDER DISCUSSION

"39—RENTAL OF SPACE AS PHARMACY ON PERCENTAGE OF INCOME BASIS UNETHICAL

"The rental of space by a physician or group of physicians as a pharmacy should be a fixed one. Were the rental

to be based on the amount of business, it might well be argued, and indeed be the case, that fee splitting existed. In addition, the temptation would be ever present for the doctor-owner to encourage patients to take their prescriptions to that pharmacy. The evils inherent in such practice are too obvious to be mentioned. (Judicial Council, 1960)

"40—DISPENSING OF DRUGS AND APPLIANCES BY PHYSICIANS

"It is not unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient. (Principles of Medical Ethics, 1955 edition, Chapter I, Section 8)

"41—OWNERSHIP OF PHARMACY BY PHYSICIAN

"The Principles of Medical Ethics were revised in Atlantic City at the June 1955 Session of the House of Delegates to read as follows: 'It is not unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient'.

"Under this language, the Judicial Council does not believe it can be considered unethical for a physician to own or operate a pharmacy provided there is no exploitation of his patient. (Judicial Council, 1957)

"42—PHYSICIAN OWNERSHIP OF DRUGSTORES, DRUG REPACKAGING HOUSES AND PHARMACEUTICAL COMPANIES AND DISPENSING OF GLASSES BY PHYSICIANS

"Section 7 of the Principles of Medical Ethics provides: 'Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient. Under this language it cannot be considered unethical for a physician to own or operate a pharmacy provided there is no exploitation of his patient.

"It is unethical for a physician to have a financial interest in a drug repackaging company.

"It is unethical for a physician to own stock in a pharmaceutical company which he can control or does control while actively engaged in the practice of medicine.

"These practices are contrary to the best interest of the public and the medical profession.

"The Council calls the attention of the House to the following statement concerning the meaning of the words 'drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient' which was adopted by the Council on June 26, 1958.

"It is the opinion of the Judicial Council that this language was adopted to permit both the practicing physician and the local medical societies to evaluate the many factual situations incident to prescribing and dispensing which are bound to arise in the practice of medicine. Under this language the doctor is permitted to exercise his own best judgment when caring for his patients. It is known that there will be situations when it is necessary or desirable for a physician to dispense or supply what he has prescribed. The Principles permit this to be done. On the other hand, this broad language provides a means by which a component medical society can inquire into the facts of a particular practice. The profession thus can act to prevent abuse of discretion and protect patients from exploitation. In essence this language means that a physician in the exercise of sound discretion may dispense 'in the best interest of his patient; it does not authorize him to dispense solely for his convenience or for the purpose of supplementing his income. (House of Delegates, 1963)

"43—DEFINITION OF A DRUG REPACKAGING COMPANY

"The term 'repackaging company' as

used by the Judicial Council and approved by the House of Delegates refers to a drug company which markets under its own label or trade names drug products manufactured by others with the objective that physicians having a financial interest in the drug company will prescribe its drugs to the patient. (Judicial Council, 1963)

"44—OWNERSHIP OF STOCK IN A NURSING HOME

"It is proper for a physician to own or have a financial interest in a nursing home or similar facility providing the patient has free choice of physician. (Judicial Council, 1963)

"45—OWNERSHIP OF STOCK BY OPHTHALMOLOGIST IN OPTICAL DISPENSING SHOP

"The Judicial Council expressed the opinion that this situation is comparable to physician-ownership of drugstores. That is, the Council does not believe it is improper to own an optical dispensing shop provided there is no exploitation of the patient. (Judicial Council, 1963)

"46—DISPENSING OF PRESCRIPTIONS IN CODE

"Physicians who enter into agreements with the pharmacists in the dispensing of prescriptions in code are guilty of unethical practices and should be disciplined by their local society. (House of Delegates, 1953)

"47—DIRECT TELEPHONE LINE TO PHARMACY

"The Judicial Council expressed the opinion that the principle of free choice of physician applies as well to the choice of a pharmacy. Accordingly, the Council looks with disfavor upon the use of direct telephone lines between a physician and a pharmacist on the theory that a patient is entitled to a written prescription which he can take to the pharmacist of his choice. (Judicial Council, 1953)

"48—FORM OF PRESCRIPTION BLANKS

"It is unethical for physicians to use

prescription blanks with the name of a pharmacy printed thereon. (Judicial Council, 1964)

"49—RIGHT OF PATIENT TO COPY OF PRESCRIPTION

"A patient is entitled to a copy of his or her prescription for glasses, drugs, or appliances and he has the privilege of having the prescription filled wherever he wishes. (Judicial Council, 1963)

"50—RENTAL OF SPACE TO AN OPTICIAN

"An arrangement whereby space in a medical building owned by an ophthalmologist is leased on a fixed rental basis to an optician, provided patients are not 'steered' to the optician, is not contrary to the Principles of Medical Ethics. (Judicial Council, 1962)"

The following material was sent to The Medical Society of the State of North Carolina under the date of March 24, 1967, and received in the Society offices on March 30, 1967, along with an accompanying letter stating, "This is an important opinion of the Judicial Council which is forwarded to you for such dissemination as you deem appropriate". Copies of the opinion were sent by the Headquarters Office to all Presidents of Component County Medical Societies in North Carolina. It is felt that it is in the interest of wisdom to include that opinion in this material in order that it may be a matter of record and available to each member of The Medical Society of the State of North Carolina, and not necessarily available only to the president of the component societies.

"ETHICAL RESPONSIBILITIES IN PRESCRIBING DRUGS AND DEVICES

"It is unethical for a physician to be influenced in the prescribing of drugs or devices by his direct or indirect financial interest in a pharmaceutical firm or other supplier. It is immaterial whether the firm manufactures or repackages the products involved.

"It is unethical for a physician to own stock or have a direct or indirect financial interest in a firm that uses its relationship

with physician-stockholders as a means of inducing or influencing them to prescribe the firm's products. Practicing physicians should divest themselves of any financial interest in firms that use this form of sales promotion. Reputable firms rely upon quality and efficacy to sell their products under competitive circumstances, and not upon appeal to physicians with financial involvements which might influence them in their prescribing.

"Prescribing for patients involves more than the designation of drugs or devices which are most likely to prove efficacious in the treatment of a patient. The physician has an ethical responsibility to assure that high quality products will be dispensed to his patient. Obviously, the benefits of the physician's skill are diminished if the patient receives drugs or devices of inferior quality.

"Inasmuch as the physician should also be mindful of the cost to his patients of drugs or devices he prescribes, he may properly discuss with his patients both quality and cost.

"Adopted by the Judicial Council, American Medical Association, March 12, 1967."

This concludes the part of this presentation which is direct quotation of material having to do with medical ethics in a certain restricted field.

COMMENT:

It is felt that presentation of this material is timely for the benefit of the membership of The Medical Society of the State of North Carolina, particularly in view of numerous articles in the public press, both newspapers and magazines, apparently arising out of some of the activities of the Senate Anti-trust and Monopoly sub-committee, which have tended to attempt to place physicians in North Carolina and organized medicine in North Carolina in a bad public light by certain statement of listings of alleged data in this connection.

It is further unfortunate that, although statements are made that The Medical Society of the State of North Carolina has been communicated with by the staff of this sub-committee, the material hit the press

long before the Society received any communication about it.

The chief areas of discussion seem to be with reference to ophthalmologists being involved in the dispensing of eyeglasses by certain connections that they may or may not have with optician laboratories.

The second area involves physician participation in ownership of certain pharmacies or drugstores within the state.

The third involves the participation by physicians as stockholders in what are termed "repackaging houses".

Some of the alleged data upon which some of the news stories and releases are based is several years old, and a review of some of the data suggests that some of the allegedly involved persons are, and have been, dead for at least one year, or have retired from active practice.

State Society officials and the Headquarters Staff have been following the testimony before the Hart Sub-committee in depth and will continue to stay on top of the matter.

A delegation from the Society called upon and interviewed the principals of the two alleged "drug repackaging houses" domiciled in North Carolina. Each conference was an "on site" visitation.

The Senate Sub-committee has stated that they have data obtained from the records of the North Carolina State Board of Pharmacy relating to physician ownership or rental.

Article IV, General Statutes of North Carolina, Part I, Practice of Pharmacy, G.S. 90-53 through 85.1, does not state that the stockholders in a pharmacy shall be a matter of public record. However, there is within the law a statement that certain rules and regulations by implication can be set up by the Board of Pharmacy. As of this writing, we do not know just exactly what is in the Rules and Regulations.

It is pointed out that Medical Ethics bear down heavily on one particular point, that being in connection with drugstores, repackaging houses, and other matters, there shall be "no exploitation of the patient". Medical Ethics certainly do not prevent, preclude, or frown upon physician participation and

stock ownership of a drugstore or pharmacy, providing there is no exploitation of the patient.

Number 43 in the Opinions and Reports, Judicial Council, 1966, wherein the term "repackaging company" is defined is a difficult definition to follow when any attempt is made to determine what a repackaging house is.

The foregoing is furnished entirely as information.

Frank W. Jones, M.D.

Committees & Organizations

NORTH CAROLINA STATE BOARD OF HEALTH
COMMUNICABLE DISEASE CONTROL SECTION
DIVISION OF EPIDEMIOLOGY

THE NORTH CAROLINA STATE BOARD
OF HEALTH AND MEASLES
PREVENTION

PETER E. SCHRAG, M.D.*

The advent of measles vaccine has given the medical profession an impressive new way to keep patients healthy. This success follows the recent triumph over polio. Since to our knowledge there has not been a case of polio in North Carolina in more than two years, the possibility of achieving similar success against measles has been seriously considered.

After measles vaccination was accepted and recommended by pediatric associations, a number of circumstances placed the North Carolina State Board of Health in a position to facilitate the distribution of measles vaccine. The State Board of Health never conducted scientific studies to determine the safety or efficacy of measles vaccine. This paper will not describe or discuss the development of the vaccine, its testing, or the differences between the two major types of measles vaccine. However, it is hoped that the role of the State Board of Health in the distribution of the vaccine

*Field Epidemiologist, Communicable Disease Control Section, North Carolina State Board of Health.

Request for reprints to P. O. Box 2091, Raleigh, N. C. 27602.

will be of interest, and that information about our experience in North Carolina will help to produce meaningful criticism.

In 1962 the Congress of the United States of America passed the Vaccination Assistance Act. The purpose of this law was "to assist states and communities to carry out immunization programs designed to protect their populations, particularly all preschool children, against poliomyelitis, diphtheria, whooping cough, tetanus, and measles." One effect of this law has been to make measles vaccine available for distribution to the health departments and physicians in North Carolina. The only requirements made by the U. S. Public Health Service have been that the vaccine be given to children not registered in school and that there be no charge for the actual cost of the vaccine. Physicians may charge for the cost of administration, and there were no further specifications. Large amounts of vaccine have been received by the State Board of Health from the Public Health Service since July 1966.

The vaccine chosen by the U. S. Public Health Service was Edmonston Strain—Type B, manufactured by the Philips-Roxane Company. It is recommended that it be given with gamma globulin. This vaccine was found by the Public Health Service to be as effective and as safe as other measles vaccines, and the Philips-Roxane Company's bid for the government contract was by far the lowest. The contract with the Public Health Service involved several million doses of vaccine, and the bid was 68 cents per dose, which included the gamma globulin. The next lowest bid was more than double this price. It is this vaccine that is now being used extensively throughout the United States. It has been approved by the American Academy of Pediatrics. The North Carolina State Board of Health was never in a position to choose which vaccine it could have.

The counties in North Carolina have been free to decide whether and how to distribute the measles vaccine that was made available to them. Some have used the single-day mass immunization campaign that was so successful during the early days of polio vaccina-

tion. Such campaigns have been sponsored by the county medical societies and the health departments. The role of the State Board of Health in such efforts has been rather limited. The Board has supplied the vaccine in some but not all cases. Many counties wanted to administer the vaccine with the jet-injector guns that are now used extensively in mass programs and in the military. The State Board of Health borrowed such guns and demonstrated their use to the local nurses, who became proficient with them after a short period of instruction. Some counties preferred to vaccinate large numbers of children using needle and syringe, and this has, of course, worked equally well.

From January, 1966, through January, 1967, a total of 21 counties have had well-publicized mass measles immunization campaigns in which a total of 42,000 children were vaccinated. Eight of these counties bought Schwarz vaccine with their own funds. The others used vaccine supplied by the State Board of Health. The State Board of Health was obligated to offer those North Carolina counties who requested vaccine their share of federal benefits. Of interest is that no health director in these counties has been informed of a case of encephalitis, nor have any complaints been received from physicians because they had to see children with fever, febrile convulsions, or other side effects.

The mass campaigns for measles vaccination began more than two years after the vaccine was recommended to become part of routine child health care. Yet many people in North Carolina were made conscious for the first time that measles is preventable. In one of our more prosperous counties a survey was conducted by the health director during a widespread measles outbreak. Approximately 45% of the children had been vaccinated by physicians and 10% by the health department, while 45% were not seen by either physicians or the health department. It was in that unvaccinated group that measles was epidemic. The size of this group had been underestimated by almost all physicians in the community.

Mass immunization campaigns are usually



New, Long-term Psychiatric Facility

The new forty bed Parkwood Hospital specializes in long-term treatment of the mentally ill. Under the direction of a Medical Director, the hospital facilities are available to over thirty psychiatrists who are on its staff. Parkwood provides a full complement of exceptional facilities including X-ray, laboratory, pharmacy, occupational and music therapy, patient beauty parlor and an outdoor recreational area. □ Special efforts were made to combine maximum patient comfort with a warm, secure, residential atmosphere readily conducive to psychotherapy. □ We will be pleased to provide further information upon request.

Accredited by the Joint Commission on Accreditation of Hospitals

PARKWOOD HOSPITAL

1999 Cliff Valley Way, N.E./Atlanta, Georgia 30329 / Phone 634-5166 (404)

considered to be financially disadvantageous for physicians. However, such campaigns are a way to create a demand for medical care. The fact that mass immunization against measles is as temporary a phenomenon as mass immunization against polio insures that there will be no serious interference with physicians' traditional responsibilities. Many physicians have been surprised to find that they were receiving more requests for measles vaccine after a local mass measles immunization campaign than they had previously. Evidently many more people had been made aware that there is a vaccine against measles.

Many counties have preferred to offer measles vaccine through their health departments but have not widely publicized its availability. In such counties only a small percentage of those who do not routinely see a physician ever receive vaccine. This estimate can be made from the records that have been kept of vaccine that was supplied by the State Board of Health.

The vaccine supplied by the U. S. Public Health Service had been restricted by act of Congress for use with preschool children. Recently vaccine has also been made available for use in school children if measles is present in their school. Such restrictions have produced administrative complications for county health directors. On the other hand, the availability of vaccine for school children who do not receive care from a physician has helped to abort several outbreaks of measles in schools. Many physicians question the practice of vaccinating children who may already have been exposed to measles. Unfortunately, in many areas comprehensive individual child care so that a child exposed to measles will first receive gamma globulin and then be vaccinated later is impossible. If other care is not feasible, all those who are not already incubating the illness can be protected by prompt vaccination.

To distribute vaccine to children in schools where measles is prevalent, it becomes necessary to know when measles occurs. At present there are many schools and communities where parents and school offi-

cials are not informed when measles is occurring. There is now good reason for physicians to report to the community, through the health department, that measles is prevalent so that spread through a school can be prevented.

Mass measles immunization campaigns will soon be unnecessary. This is because most physicians and health departments now include measles vaccination as part of the routine immunization of infants. Unquestionably the cost of the vaccine will decrease greatly and the need to distribute free vaccine will also diminish or disappear. It is fair to inquire of what concern, if any, measles will then be to the North Carolina State Board of Health. As long as children have measles, however, there will be public concern. The State Board of Health will continue to encourage the reporting of measles, so that vaccinations can be promptly given to all susceptible children.

In a sense the prevalence of measles will soon become a sensitive indicator of the state of medical care in a community. It is hoped that the present emphasis on measles prevention in North Carolina will soon make this disease as rare as polio.

Bulletin Board

COMING MEETINGS

North Carolina Heart Association, Annual Meeting—
Jack Tar Hotel, Durham, May 17-18.

Medical Society of the State of North Carolina, 113th Annual Session—Pinehurst, May 20-24.

University of North Carolina School of Medicine, Symposium on Medicine and Religion—Chapel Hill, June 11-13.

Tri-State Medical Association, Annual Meeting—
Nags Head, June 12-14.

Mountain Top Medical Assembly, 14th Annual Meeting—Waynesville, June 15-17.

Sixth Annual Southwide Lawyers and Physicians Conference—Lake Junaluska, August 9-13.

NEW MEMBERS OF THE STATE SOCIETY

Dr. Ritz Clyde Ray, Jr., 1725 Beaumont Road, Greenville.

Dr. Christopher Lincoln Hunt, 126½ E. Hargett Street, Raleigh.

Dr. Benjamin Wesley Garrou, Sr., Mountain View Drive, Valdese.



CANTIL[®]

(mepenzolate bromide)



Diarrhea, one of the most vexing symptoms of common G. I. disorders can often be curbed with Cantil (mepenzolate bromide), bringing welcome relief to the harassed patient. Relatively specific for the hyperactive colon, it helps reduce diarrhea, pain and spasm with minimal effect on other viscera. Cantil (mepenzolate bromide) is indicated whenever these symptoms are associated with irritable colon, gastroenteritis, diverticulitis, and mild to moderate ulcerative colitis.

It is an anticholinergic drug without narcotic properties. Side effects are usually mild.

IN BRIEF: One or two tablets three times a day and one or two at bedtime usually provide prompt relief. Cantil with Phenobarbital may be prescribed if sedation is required.

Dryness of the mouth, blurring of vision, constipation, nausea, vomiting, bloating and dizziness may occur but are usually mild and transitory. Urinary retention is rare. Caution should be observed in prostatic hypertrophy — withhold in glaucoma. Contraindicated in patients sensitive to phenobarbital and/or Cantil (mepenzolate bromide); in toxic megacolon, obstruction of G. I. or G. U. tract.

SUPPLIED: CANTIL (mepenzolate bromide) — 25 mg. per scored tablet. Bottles of 100 and 250. CANTIL with PHENOBARBITAL — containing in each scored tablet 16 mg. phenobarbital (warning: may be habit forming) and 25 mg. mepenzolate bromide. Bottles of 100 and 250.

LAKESIDE LABORATORIES, INC., Milwaukee, Wisconsin 53201

Dr. Gary B. Copeland, 1629 Owen Drive, Fayetteville.

Dr. James Andrew Watt, Cape Fear Valley Hospital, Fayetteville.

Dr. Arlie Harold Westfall, 202 W. 27th Street, Lumberton.

Dr. R. L. Englebert, Mountain San Hospital, Fletcher.

Dr. Charles Dudley Farmer, 1350. Kings Drive, Charlotte.

Dr. Gloria Graham, W. Nash Street, Wilson.

Dr. Emile L. Gebel, 209 Lee Street, Shelby.

Dr. Wilburn Oscar Brazil, Jr., Medical Center Building, Asheville.

Dr. David Somers Johnston, 1822 Brunswick, Charlotte.

Dr. Bernard Vick, 4 Medical Pavilion, Greenville.

Dr. Edgar Baker, Franklin.

Dr. Dewey Harris Pate, Wake Memorial Hospital, Durham.

Dr. Richard J. Rosen, 1219 Magnolia Street, Greensboro.

Dr. R. L. Milholm, 1801 Asheville Highway, Hendersonville.

Dr. Addison Mangum, Stanly County Hospital, Albemarle.

Dr. Assadullah Meymandi-Nejad, 1665 Owen Drive, Fayetteville.

Dr. Robert MacGregor Shive, 1928 Randolph Road, Charlotte.

Dr. Clay C. Daughtridge, Jr., Pinehurst Medical Center, Pinehurst.

Dr. George Kemp Massengill, 3015 Warren Avenue, Raleigh.

NEWS NOTES FROM THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE

The U.N.C. Carolina Population Center is now officially in business in Southeast Asia.

In its first grant specifically to activate a foreign population program, the Rockefeller Foundation has awarded \$130,000 to the University of North Carolina's population enterprise for the development of collaborative research and educational activities between the center on the U.N.C. campus and the center for Population and Social Research at the University of Medical Sciences in Bangkok, Thailand. The three-year grant will finance an exchange of faculty and students and will sponsor field research studies on population and family planning.

Dr. Robert Burnight, a sociologist at Brown University, will be granted a leave of absence to become U.N.C.'s population consultant in Thailand under the Rockefeller grant. He will begin his duties this summer.

Planning for the two-university population program was conducted during visits to Thailand by several U.N.C. faculty members. Included were Dr. Moaye Freymann, director of the Carolina Population Center; Dr. John Graham, chairman of the U.N.C. Population

Program Board; Mrs. Ethel Nash of the Department of Obstetrics and Gynecology, and Dr. John Gentry, Dr. Charles Arnold, Dr. Ralph Boatman, and Dr. Richard Udry of the School of Public Health. Dr. Amos Hawley of the Department of Sociology has spent 18 months working on population studies in Bangkok and is a member of the working group for the U.N.C. project.

The arrangement with Thailand is one of several international relationships fostered by the Carolina Population Center between U.N.C. and institutions abroad.

* * *

Medical schools should do more than train doctors and conduct research. They should help community hospitals—"the doctors' workshops"—improve services to patients. This conclusion is based on a three-year demonstration project conducted in North Carolina by the Department of Hospital Administration at the U.N.C. School of Medicine under a U. S. Public Health Service grant.

The study report just issued concludes "unequivocally" that a university should assume this responsibility.

Dr. Robert R. Cadmus, project director, and Harvey E. Archer, co-director have recommended that every medical school in the U. S. establish an office to render consulting services to community hospitals and other health agencies.

They suggested that geographical service areas be defined for the medical schools, and in areas where two or more medical schools are in close proximity they should split the territory to be served or the consulting services to be offered (with one school specializing in business affairs and another in matters of patient care).

"This project," Archer said "was based on the theory that if a school of medicine was really interested in the quality of patient care, it was not sufficient for it to concentrate only on undergraduate and graduate medical education and medical research. If a school was really interested in quality medical care, it must also concern itself with the physician's workshop, particularly the community hospital."

The Department of Hospital Administration in Chapel Hill served for three years as a consultant to hospitals seeking outside help with problems, assisting at least one hospital in each of 36 counties during the study period. Problems varied from long-range planning to hospital-physician relationships.

The study team emphasized that providing the necessary consulting service to hospitals would require "adequate staff, ample funds, and suitable space."

* * *

A physician whose hobby for nearly half a century has been the study of red blood cells delivered the second annual Merrimom Lecture at the University of North Carolina School of Medicine on March 22.

He was Dr. William B. Castle, physician and medical educator known for his experimental work on human digestion which led to understanding of pernicious anemia.

A preview of some of the problems for the medical student of the future was presented in a Medical Education Lecture in Chapel Hill recently by Dr. Hans Popper, dean for academic affairs and chairman of the Department of Pathology at Mount Sinai Hospital in New York City. Dr. Popper was the fifth speaker in a series of nine weekly Medical Education Lectures sponsored by the UNC School of Medicine in conjunction with its current curriculum study.

* * *

The doctor's problem: Does the patient need surgery? If so when? The patient has a leaky heart. His doctor knows that some patients with this condition get along without any apparent trouble for as long as 50 years, but he knows, too, that a leaky valve can overwork the heart and eventually damage the heart muscle beyond repair.

Dr. Daniel T. Young, a heart specialist at the U.N.C. School of Medicine, has been awarded a U. S. Public Health Service grant of almost \$18,000 for the first year of a two-year research study designed to improve a doctor's ability to evaluate patients who may need heart surgery.

Dr. Young's research study has three objectives.

First, he will use normal subjects and patients with heart disease to find out more about the "quantitative function" of the heart during exercise, since more needs to be learned about what heart abnormalities show up at exercise which are not apparent at rest.

Second, he is interested in developing an index to measure the disability of a patient's circulatory system by measuring the lactic acid accumulation in the blood.

Finally, the study will use methods developed in the first two phases to evaluate the results of surgery on heart patients.

The research study will be conducted in the cardiac catheterization laboratory at the U.N.C. School of Medicine.

* * *

People to staff local and state mental health centers are being offered advanced training in community mental health under a joint program of the schools of medicine and public health at the University of North Carolina.

The special training program is for psychiatrists, psychologists, social workers, nurses, administrators, social scientists, and others preparing for positions in mental health centers.

One year of training can lead to a certificate in mental health program administration. Two years in the program provides eligibility for a master of public health degree.

Dr. William G. Hollister, director of community psychiatry in the U.N.C. Department of Psychiatry, said that a limited number of stipends are available.

* * *

Federal funds totaling more than \$400,000 have been awarded to the University of North Carolina for general research in medicine, public health and dentistry.

The U. S. Public Health Service's Division of Research Facilities and Resources renewed its general research support to the U.N.C. School of Medicine in the amount of \$216,294.

The U.N.C. School of Public Health was awarded \$94,363, and the U.N.C. School of Dentistry received \$30,286.

The amounts represent about 90% of the total research funds the three schools will receive for 1967. The remaining 10% is to be awarded no later than June 30.

* * *

The Association of University Cardiologists has elected a U.N.C. heart specialist as its president for the coming year. Dr. Ernest Craige, professor of medicine at the UNC School of Medicine and chief of cardiology at N. C. Memorial Hospital in Chapel Hill, was named to the A.U.C. presidency at the sixth annual meeting.

NEWS NOTES FROM THE BOWMAN GRAY SCHOOL OF MEDICINE WAKE FOREST COLLEGE

Plans are now being developed at the Bowman Gray School of Medicine to increase the medical student enrollment from 215 to 300 during the next five years.

An unrestricted grant of \$37,500 has been awarded to the medical school by the Merck Company Foundation, Rahway, N. J., to assist in this project.

Compliments of

Wachtel's, Inc.



Surgical Supplies



15 Victoria Road

P. O. Box 1716 Telephone AL 3-7616

ASHEVILLE, North Carolina

The first major increase in enrollment will occur in September, 1968, when the first-year class will be enlarged. Seventy-five first-year students will be enrolled each year thereafter.

The schedule for student body expansion is geared to the construction schedule for facilities included in the \$28-million building program of the Bowman Gray School of Medicine and North Carolina Baptist Hospital. Work on the first phase of this program will begin in May.

* * *

The Bowman Gray School of Medicine was recently awarded a \$31,300 grant to support the development and evaluation of new teaching methods in pharmacology. The two-year grant was awarded through the National Fund for Medical Education's new program for the improvement of medical instruction.

Medical schools participating in the program were selected by a national committee on the merit of their projects and the possible impact the projects would have on medical education throughout the nation.

The Bowman Gray project, directed by Dr. J. Maxwell Little, professor and chairman of the Department of Pharmacology, will explore the use of closed-circuit television, TV tapes, movies, tape recorders, teaching machines, and other audio-visual aids in the teaching program.

Funds for the Bowman Gray project were provided to the National Fund for Medical Education by R. J. Reynolds Tobacco Co., one of several corporations which have contributed regularly to the National Fund and its programs.

While the project is aimed primarily at increasing the effectiveness of instruction in pharmacology, it could help to solve some of the teaching problems that are common to most medical schools, particularly in the basic medical sciences.

* * *

Dr. Margaret C. Conrad, assistant professor of physiology, is the recipient of a first-place award for an exhibit she presented at the 16th annual scientific session of the American College of Cardiology Feb. 16-18 in Washington, D. C. She was presented the Governor's Award, an engraved plaque, for her exhibit on "Patterns of the Circulation in Arterial Occlusion."

* * *

Dr. Stephen H. Richardson, assistant professor of microbiology, recently received a Research Career Development Award from the National Institutes of Health. The award will support him during a five-year study of the organism (*Vibrios*) that causes cholera.

Dr. Richardson, the eighth member of the medical school faculty to receive such a fellowship, was awarded a first-year stipend of \$13,346. The total value of the award is estimated at \$70,000.

He will investigate new aspects of cholera research, particularly relating to the biochemical action of the organism that causes the disease. The work could lead to the development of an improved vaccine for use in preventing cholera.



What can be done for Susan Jane To stop the runs and crampy pain?

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin, and protects
intestinal mucosa.

In children, Parepectolin may be used to control diarrhea promptly and prevent dehydration, until etiology has been determined. In some cases, Parepectolin may be all the therapy necessary.



Parepectolin®

Each fluid ounce of creamy white suspension contains:
Paregoric (equivalent).....(1.0 dram) 3.7 ml.
Contains opium (1/4 grain) 15 mg. per fluid
ounce.

warning: may be habit forming

Pectin (2½ grains) 162 mg.
Kaolin (specially purified).... (85 grains) 5.5 Gm.
(alcohol 0.69%)

Usual Children's Dose: One or two teaspoonfuls
three times daily.



WILLIAM H. RORER, INC.
Fort Washington, Pa.

A special research fellowship has been awarded to Dr. Arthur Wainer, assistant professor of biochemistry at the Bowman Gray School of Medicine, by the National Institute of Arthritis and Metabolic Diseases. The award will support him during a three-year study of amino acids.

Dr. Wainer's work will deal principally with the metabolism of cystine and its role in the cause and progression of such diseases as cystinosis, cystinuria and mongolism. He will receive a first-year stipend of \$12,000. The total value of the fellowship is estimated at \$40,000.

* * *

Dr. Quentin N. Myrvik, professor and chairman of the Department of Microbiology, has been appointed to a three-year term as section editor of RES: Journal of the Reticuloendothelial Society. He will edit the section on Host-Parasite Relationship.

* * *

Nine students and two faculty members at the Bowman Gray School of Medicine were installed Feb. 21 as new members of Alpha Omega Alpha, national medical honor society. Installation ceremonies took place at the annual banquet of the North Carolina Beta Chapter of AOA.

Senior students elected were James L. Biesecker of Lexington, Gerry D. Martin of Troutman, W. Anthony Smithson of Winston-Salem, John A. Thompson, Jr., of Winston-Salem, E. Franklin Tulloch Jr., of Winston-Salem, and Wilson K. Wallace of Charlotte. Elected from the junior class were Marshall R. Ball of Newbern, Herbert M. Schiller of Winston-Salem, and James L. Self of Raleigh. Dr. Donald M. Hayes, associate professor of medicine, and Dr. Courtland H. Davis Jr., professor of neurosurgery, are the faculty members elected to membership.

* * *

Dr. Frederick L. Thurstone, associate professor and director of the Department of Biomedical Engineering at the Bowman Gray School of Medicine, has been selected as a U. S. delegate to the United States-Japan Seminar on Holography Oct. 2-10 in Tokyo, Japan. The seminar is sponsored by the U. S. National Science Foundation and the Japan Society for the Promotion of Science.

* * *

Dr. Eben Alexander Jr., professor of neurosurgery, served as visiting professor of neurosurgery at Cincinnati General Hospital and as visiting chief of neurosurgery at Good Samaritan Hospital and Christ Hospital Feb. 15-17 in Cincinnati, Ohio. He lectured on "The Treatment of Pain" at a Feb. 15 meeting of the Cincinnati Society of Neurology and Psychiatry and conducted a Clinicopathological Conference the following day at the University of Cincinnati College of Medicine.

* * *

Dr. Frank C. Greiss Jr., assistant professor of obstetrics and gynecology, served on the faculty for a post-graduate course Feb. 16-17 at the University of Alabama Medical College. He lectured on "Clinical

Concepts of Uterine Blood Flow during Pregnancy;" "Physiological Evaluation of Blood Loss;" and "Practical Aspects of Managing Early Malignant or Premalignant Lesions of the Cervix Uteri." He also participated in panel discussions on "Therapeutic Abortions" and "Sex Education and Premarital Counseling."

* * *

Dr. Eugene B. Linton, assistant professor of obstetrics and gynecology, spoke on "The Physician and the Changing Morality" at a February meeting of the Dade County Medical Association in Miami, Fla.

* * *

Dr. I. Meschan, professor and chairman of the Department of Radiology, was visiting professor of radiology Feb. 6 at the University of Washington School of Medicine. He spoke on "Renal Function Assay with Newer Radiological Methods."

* * *

Dr. Robert P. Morehead, professor and chairman of the Department of Pathology, was guest examiner for second-year pathology final examinations recently at the University of Colorado School of Medicine. Since his textbook, "Human Pathology: An Introduction to Medicine," is the text used in the pathology course at that medical school, his presence as examiner was regarded as a "grand finale" to the completion of the course.

NEWS NOTES FROM THE DUKE UNIVERSITY MEDICAL CENTER

Dr. J. Leonard Goldner of Duke University Medical Center has been named Physician of the Year by the Medical Society of the State of North Carolina.

Dr. Goldner, a professor of orthopedic surgery, was cited by the Society's executive council for his work over the years in helping handicapped adults. Gov. Dan Moore presented the award at a ceremony March 16 in the Old House Chamber of the State Capitol.

Since coming to Duke in 1949, Dr. Goldner has won a wide reputation in the field of orthopedic surgery. He is chief of the Duke Amputee Clinic.

Dr. Goldner is a member of the Crippled Children's Advisory Committee of the State of North Carolina. He is a consultant in orthopedic surgery and surgery of the hand at Durham Veterans' Hospital and at the North Carolina Cerebral Palsy Hospital. He also is a consultant to Watts Hospital, Lincoln Hospital, and Southeastern General Hospital at Lumberton, N. C.

* * *

Dr. E. W. Busse, chairman of the Department of Psychiatry at Duke University Medical Center, has been selected winner of the 1967 Edward B. Allen Award by the American Geriatrics Society.

The award was made to Dr. Busse for "important contributions to the field of geriatric psychiatry." Consisting of a gold medal and an honorarium of \$1,000, it will be presented at the society's annual dinner in Atlantic City June 16.

At a meeting in that same afternoon, Dr. Busse will

deliver a paper on geriatric psychiatry. It will be based on his work as director of the Duke University Center for the Study of Aging and Human Development.

Dr. Busse is J. P. Gibbons Professor of Psychiatry at Duke and has been chairman of the department since 1953. He is currently vice president of the American Psychiatric Association and a director of the American Board of Psychiatry and Neurology.

* * *

Duke University School of Medicine has been cited as one of five leaders in medical education in the United States.

The tribute comes from Dr. G. Morris Carstairs, a member of Great Britain's Royal Commission on medical education, in the current issue of *The PHAROS*, the quarterly magazine of Alpha Omega Alpha, the honor medical society.

Singled out in addition to Duke for their futuristic outlook toward medical education are Yale, Stanford, the University of California at Los Angeles, and Indiana University.

These schools, said Dr. Carstairs, have had the courage to realize that medical education in the future must be less comprehensive and more diversified.

Dr. Carstairs' commendation is prompted by the sweeping curricular changes these schools have made in recent years.

Duke, whose example was followed this year by Indiana University, has made the radical change of compressing the preliminary preclinical instruction into a one-year course. This is followed by a 16-month stretch of clinical and applied-science teaching and clerkship. After this, students can choose electives from a range of alternatives in medical science, basic sciences, or in clinical fields.

* * *

A group of distinguished science writers gathered at Duke University recently for a seminar on organ transplantation. The writers, representing major publications from across the country, were brought up to date on the efforts of science to overcome the barriers to more frequent transplantation of organs.

Among the major publications represented at the seminar were *Time Magazine*, *Newsweek Magazine*, *Saturday Evening Post*, *Look Magazine*, the *Washington Post*, the *Los Angeles Times*. In addition, writers from the principal wire services were present.

* * *

Dr. Donald Silver, Dr. W. G. Anlyan, and Dr. Paul

Ebert presented research papers at a meeting of the Society for University Surgeons held in Toronto, Canada, recently.

Also attending the meeting from Duke were Dr. David Sabiston, chairman of the Department of Surgery, and Dr. William W. Shingleton.

* * *

A Duke University scientist has called for enabling legislation to permit a patient to bequeath an organ of his body for transplantation to another.

Dr. D. Bernard Amos told a distinguished group of scientists and science writers that thousands of patients with chronic and degenerative diseases could be treated if it were not for legislation which makes it difficult for individuals to donate their bodies or parts of them to science.

Speaking at a science writers' seminar on the broad field of transplantation, Dr. Amos proposed a program for the rational use of non-living donors for the treatment of many types of clinical disease.

The three biggest barriers to such a program said Dr. Amos, are: (1) The lack of enabling legislation to permit a patient to bequeath an organ of his body for transplantation; (2) the need for further research to improve methods for preservation of organs, and (3) the need for more adequate financing.

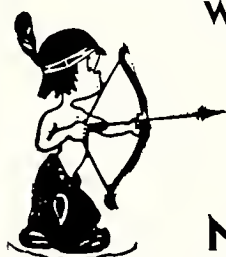
U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

The cooperation of physicians is requested in the referral of patients with the highly suspicious or proven diagnosis of "Chediak-Higashi Syndrome" for a study being conducted at the Clinical Center of the National Institutes of Health. This study is a cooperative effort of three Institutes: National Cancer Institute, National Institute of Allergy and Infectious Diseases, and National Institute of Dental Research.

The purpose of this investigation is to relate the behavior of the patients' lymphocytes and the characteristics of their lysosomes to the clinical manifestations of the disease.

Patients admitted will be evaluated for their response to chemotherapy. Upon completion of the study, the patient's referring physician will be contacted concerning indications for further treatment.

Physicians interested in having their patients considered for admission to this study may write Stanley D. Handmaker, M.D., Clinical Center, Room 2-B-10, National Institutes of Health, Bethesda, Md. 20014.



WESTERN CAROLINA'S GREAT SMOKIES at their BEST . . .

A wonderful place to spend a night, a month or the summer . . . RELAX and forget the outside world . . . ENJOY a vacation in a most wonderful and comfortable RESORT . . . RUSTIC but MODERN . . . RESTFUL but with many kinds of fun-giving facilities . . . For the LONER or FAMILY . . . Leave the hustle and bustle of the outside world behind and RIDE, SWIM, GOLF, LOAF, SUNBATHE, FISH and REST . . .

NANTAHALA VILLAGE

Drawer M-4 Phone 9225
BRYSON CITY, NORTH CAROLINA

AMERICAN COLLEGE OF GASTROENTEROLOGY

The American College of Gastroenterology, in cooperation with William H. Rorer, Inc., takes pleasure in announcing the 1967 Rorer Awards Contest for the best papers in Gastroenterology.

There will be two classes of awards: (1) for the best unpublished papers in gastroenterology or an allied subject (2) for the best paper published in the American Journal of Gastroenterology during the 12 months ending June 30, 1967, for which no previous prize has been awarded.

Prizes will be awarded in each category as follows: first prize, \$500 and a three-year subscription to the American Journal of Gastroenterology; second prize, \$300 and a two-year subscription; third prize, \$200 and a one-year subscription.

In the first category, all papers submitted must represent original work in gastroenterology or an allied subject, and must not have been previously presented at meetings of any national society.

The contents of the papers may be clinical or basic science. Clinical papers must not be case records, but controlled clinical work.

All entries must be received no later than June 15, 1967, and should be addressed to the Research and Scientific Investigation Committee, American College of Gastroenterology, 33 West 60th Street, New York, N. Y., 10023.

AMERICAN MEDICAL ASSOCIATION

Three physicians and two ministers from North Carolina have been reappointed to committees of the American Medical Association, according to a recent announcement.

The physicians are Dr. Amos Johnson of Garland, reappointed the principal representative of the American Academy of General Practice on the A.M.A.'s Interspecialty Committee; Dr. Elias Faison of Charlotte, reappointed to the Council on Environmental and Public Health and to the Committee on Nursing; and Dr. Thomas D. Kinney, reappointed to the Committee on Blood.

Reappointed to the Committee on Medicine and Religion were Rev. Richard K. Young and Rev. Samuel S. Wiley of Durham.

* * *

Two North Carolina surgeons were among 15 physicians who went to Viet Nam in February, to treat civilians under the A.M.A. Volunteer Physicians for Viet Nam program.

There were Dr. W. Grimes Byerly, Jr., of Hickory and Dr. Sam H. Walker of Asheville.

Volunteer physicians serve a 60-day tour of duty at one of 18 provincial civilian hospitals in South Viet Nam. Their services are entirely unpaid except for transportation costs and an expense allowance of \$10 a day.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

James Hardman Hall, a student at Duke University, is one of 31 senior U. S. medical students who have been awarded Foreign Fellowships which will enable them to obtain supervised medical experience in relatively underdeveloped areas of the world, the Association of American Medical Colleges announced recently.

The Fellowships are made possible by a grant from Smith Kline & French Laboratories. Their primary objective is to provide students with an opportunity to benefit from unusual clinical experiences and familiarize themselves with medical, cultural, and social problems different from their own. They will be stationed in mission hospitals and outposts medical facilities.

The Month in Washington

The Department of Health, Education and Welfare stated in a special report that both hospital charges and physicians' fees increased sharply last year.

Physicians' fees, which had been rising about 3% a year in 1960-1965, went up 7.8% in 1966—the biggest annual increase since 1927.

Hospital daily charges, rising about 6% a year between 1960 and 1965, went up to 16.5% in 1966—the largest annual increase in 18 years.

The increase in doctor fees was attributed to a combination of basic factors: more people are seeking doctors' services more often and the number of active physicians is increasing relatively slowly. The study found no evidence that Medicare, which went into effect last July 1, was a major factor in the rise in doctors' fees.

The increase in hospital charges was attributed largely to rising wages, which account for two-thirds of hospital costs, and increases in the price of things hospitals buy.

Meantime, Robert J. Myers, the Social Security Administration's chief actuary, told the House Ways & Means Committee, that hospital costs had risen much faster than the Administration anticipated since the Medicare plan went into effect. If they continue their upward spiral, the costs will eat away the safety margin included under the Medicare financing plan, Myers said.

The HEW report held out little hope for

an early end to medical price increases. However, it recommended a series of actions "to slow down these increases and to promote the efficient use of medical care resources."

Recommendations in the report included:

—Comprehensive community care systems should be developed, demonstrated, and evaluated.

—Group practice, especially prepaid group practice, should be encouraged.

—Private and public health insurance plans should be broadened to include more alternative types of medical care.

—States should move quickly to establish and support strong health planning agencies at the state and local levels.

—Cost-reducing methods of reorganizing the delivery of services in hospitals and other providers of health services should be developed, demonstrated, and implemented.

—Federally supported health care programs should be used to train physician assistants, evaluate their performance, and disseminate the results.

—Federal funds available under the Health Professions Educational Assistance Amendments of 1965 should be used to support and encourage innovations in health professions' education and training which promote the efficient practice of medicine.

HEW should undertake an intensive examination of frequently prescribed drugs to assess the therapeutic effectiveness of brand name products and their supposed generic equivalents.

—The Food and Drug Administration should provide doctors with authoritative information of the efficacy and side effects of all drugs.

—The HEW should call a national conference of leaders of the medical community and public representatives to discuss ways to improve the quality and efficiency of medical care delivery.

To carry out the recommendations in the report and allied directives from Johnson, HEW Secretary John W. Gardner said he would take a number of actions, including establishment of a National Center for Health Services Research and Development

and calling of a national conference on medical care costs.

* * *

The American Medical Association contends there is not sufficient justification for a federal law that would ban dispensing of drugs and devices, such as eyeglasses, by physicians.

Dr. James Z. Appel, immediate past president of the AMA, outlined the AMA position in testimony before the Senate Antitrust and Monopoly Subcommittee which held hearings on such legislation (S. 260) introduced by its chairman, Sen. Philip A. Hart (D., Mich.).

The legislation appeared to stand little chance of being approved by Congress, at least this year. Hart has unsuccessfully pushed similar legislation for the past few years.

Book Reviews

Forensic Medicine. By O. Prokop. Edition 2. 746 pages. Berlin, Germany: VEB Verlag Volk u. Gesundheit, 1966.

This textbook, written in the German language, consists of 14 chapters and one appendix dealing with subject of legal medicine and toxicology. It contains 635 photographs, charts, and drawings; 42 pages of references cover international publications on the subject brought up to 1963. The index is adequate.

The book definitely reflects the progress which has been made in various fields of forensic medicine, and includes many new data that are not mentioned in comparable volumes, especially on the subject of serologic blood group identification, in the field of analytic toxicology, and modern photographic techniques as applied to the practice of legal medicine.

Designed primarily for the "students, physicians, and young assistants at the institutes for forensic medicine," the book will constitute an authoritative source for pathologists, lawyers, and other professionals dealing with the forensic medical cases.

Wake Memorial Hospital Opens Psychiatric Unit

Another community general hospital in North Carolina has opened an inpatient psychiatric unit.

Wake Memorial Hospital in Raleigh recently announced the opening of a 20-bed psychiatric unit for short-term patients.

Other community hospitals in North Carolina having similar services are Charlotte Memorial Hospital in Charlotte; Moses Cone Hospital in Greensboro; Memorial Mission Hospital in Asheville; Presbyterian Hospital in Charlotte; and Forsyth Memorial Hospital in Winston-Salem.

In Memoriam

Charles Emmett Lyday, M.D.

Dr. Charles Emmett Lyday, one of Gaston County Medical Society's oldest members, died of congestive heart failure in Gastonia on February 7, 1967.

Dr. Lyday was born on September 4, 1837. He received his preliminary education at Broad Valley Institute, graduating in 1906. He received the doctor of medicine degree from Emory University Medical School in 1910 and did postgraduate work at New York Roosevelt Graduate School and Hospital in 1916. He was licensed to practice medicine in North Carolina in 1916 and was engaged in office practice until shortly before his death. During this time he was a member of the Gaston County Medical Society and at the time of his death was an honorary member of the American Medical Association.

He is survived by his wife and one son, Dr. William Davie Lyday of Charlotte.

Gaston County Medical Society
J. T. Miller, M.D.

New Myanalgie Drug Offers Relief of Back, Rheumatic, Other Muscle Pain

A new myanalgie agent, a drug to relieve muscle pain, has been made available for general sale on prescription by The Upjohn Company, under the trademark Maolate (chlorphenesin arbamate).

J. C. Gauntlett, vice president of marketing, said, "The decision to market this new therapeutic agent was based on our successful and extensive testing in three key market areas of the country over a ten-month period."

Marketing of Maolate marks the first test-marketing of a prescription drug by The Upjohn Company and introduces a new drug classification, myanalgies.

According to Upjohn officials, Maolate is useful for the treatment of acute muscle pain stemming from strains or sprains of the neck, back and joints, the disc syndrome, synovitis or tendonitis, myositis or muscular rheumatism, osteoarthritis and rheumatoid arthritis.

Classified Advertisements

Pediatric practice available for follow up pediatrician mountain town-county fifty thousand population also drawing other areas. Three hospital town opening suitable two pediatricians with office available and take over arrangements. Marked urgency on this replacement. Write "Placement Service 14-25", P. O. Box 790, Raleigh, N. C. **TF**

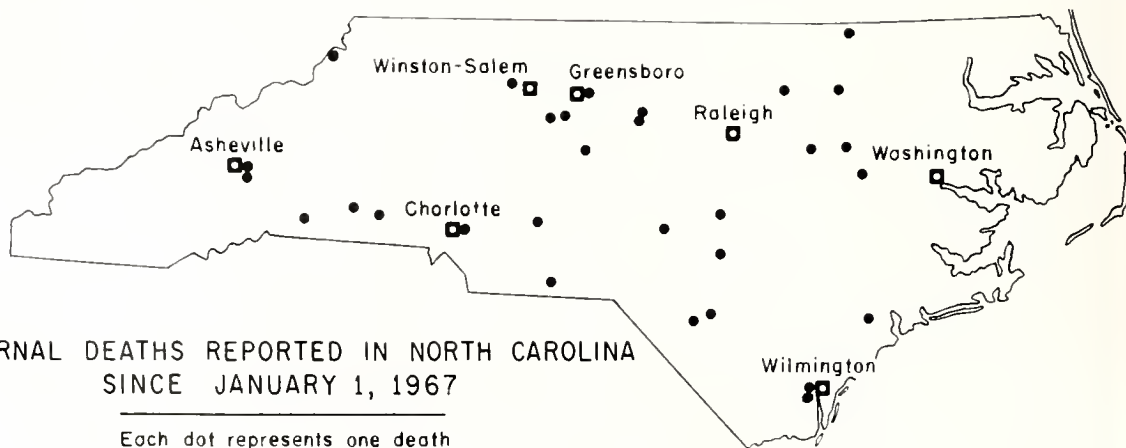
POSITION AVAILABLE—MATERNITY AND INFANT CARE PROJECT DIRECTOR: Male or female. Eligible for license to practice in Virginia; Board Certified in Obstetrics and Gynecology or in Pediatrics. Stimulating position in large City Health Department with excellent fringe benefits. Salary range \$15,000 to \$19,600 annually. Employment in advanced step, based upon qualifications. For further information, contact Director of Public Health, Richmond City Health Department, 500 North 10th Street, Richmond, Virginia. **MA**

ADMITTING PHYSICIAN—489 bed GM&S Hospital: salary up to \$19,813, as qualified; fringe benefits equal 25% of salary; moving expenses paid; excellent schools and recreational area; nondiscrimination in employment; affiliated Duke Medical School; extensive research and teaching programs; contact Chief of Staff, VA Hospital, Durham, N. C.

Wake Forest-Bowman Gray School of Medicine Clinical Cancer Training Oncology Fellowships in specialty areas (Radiology-Hematology-Chemotherapy-Surgery-Gynecology) Program of Basic Concepts, Clinical Evaluation and Investigation Stipends Based on Training of Candidates duration of appointment may vary up to twenty-four (24) months. Direct inquiry to—Program Director, Clinical Cancer Training, Bowman Gray School of Medicine, Winston-Salem, N. C. 27103.

Doctor's office available for lease in Durham, N. C. Attractive waiting room, secretary's office, doctor's office, two examining rooms, small lab in a recently built building. Write Box 790, Raleigh, N. C. or phone Durham 489-2786. **AMJ**

WANTED—GP's to work as staff physicians. Contact Superintendent, Dorothea Dix Hospital, Raleigh, North Carolina. **AMJ**



MATERNAL DEATHS REPORTED IN NORTH CAROLINA
SINCE JANUARY 1, 1967

Each dot represents one death

NORTH CAROLINA

May, 1967
Vol. 28 No. 5



MEDICAL JOURNAL

PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

IN THIS ISSUE:

North Carolina Regional Medical Program

SPECIAL REPORT

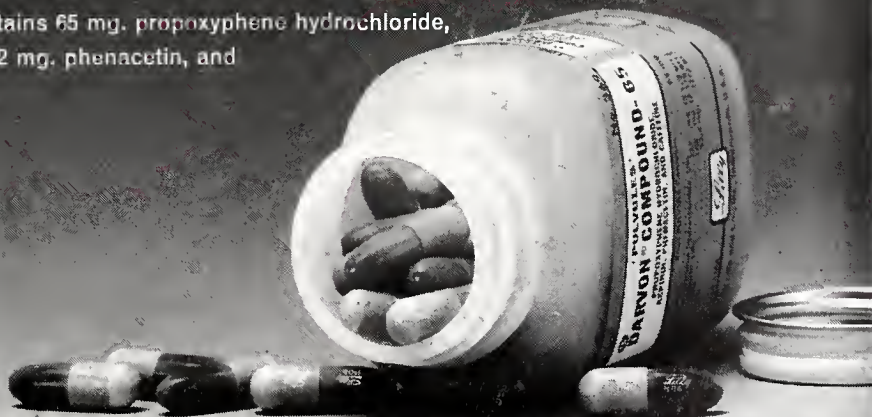
RECEIVED

MAY 19 1967

DIVISION OF
HEALTH AFFAIRS LIBRARY

Something special Darvon® Compound-65

Each Pulvule® contains 65 mg. propoxyphene hydrochloride,
227 mg. aspirin, 162 mg. phenacetin, and
32.4 mg. caffeine.



Additional information available
to the medical profession upon request.
Eli Lilly and Company
Indianapolis, Indiana 46206



700610



Diagnosis:

cystitis?
pyelonephritis?
pyelitis?
urethritis?
prostatitis?
in any case,
usually gram-negative*

Therapy:

two 500 mg. Caplets® q.i.d.
(initial adult dose)

NegGram
Brand of
nalidixic acid
a specific anti-gram-negative

eradicates most urinary
tract infections...

• Low incidence of untoward effects; no fungal overgrowth, crystalluria, ototoxic or nephrotoxic effects have been observed.

• "Excellent" or "good" response reported in more than 2 out of 3 patients with either chronic or acute gram-negative infections.¹

*As many as 9 out of 10 urinary tract infections are now caused by gram-negative organisms: *E. coli*, *Klebsiella*, *Aerobacter*, *Proteus*, *Paracolon* or *Pseudomonas*²... However, infections of the urethra and prostate caused by non-gonococcal gram-negative organisms are believed to be less prevalent.

Indications: Urinary tract infections caused by gram-negative and some gram-positive organisms.

Side effects: Mainly mild, transient gastrointestinal disturbances; in occasional instances, drowsiness, fatigue, pruritus, rash, urticaria, mild eosinophilia, reversible subjective visual disturbances (overbrightness of lights, change in visual color perception, difficulty in focusing, decrease in visual acuity and double vision), and reversible photosensitivity reactions. Marked overdosage, coupled with certain predisposing factors, has produced brief convulsions in a few patients.

Precautions: As with all new drugs, blood and liver function tests are advisable during prolonged treatment. Pending further experience, like most chemotherapeutic agents, this drug should not be given in the first trimester of pregnancy. It must be used cautiously in patients with liver disease or severe impairment of kidney function. Because photosensitivity reactions have occurred in a small number of cases, patients should be cautioned to avoid unnecessary exposure to direct sunlight while receiving NegGram, and if a reaction occurs, therapy should be discontinued. The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Bacterial resistance may develop.

When testing the urine for glucose in patients receiving NegGram, Clinistix® Reagent Strips or Tes-Tape® should be used since other reagents give a false-positive reaction.

Dosage: Adults: Four Gm. daily by mouth (2 Caplets® of 500 mg. four times daily) for one to two weeks. Thereafter, if prolonged treatment is indicated, the dosage may be reduced to two Gm. daily. Children may be given approximately 25 mg. per pound of body weight per day, administered in divided doses. The dosage recommended above for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Until further experience is gained, infants under 1 month should not be treated with the drug.

How supplied: Buff-colored, scored Caplets® of 500 mg. for adults, conveniently available in bottles of 56 (sufficient for one full week of therapy) and in bottles of 1000. 250 mg. for children, available in bottles of 56 and 1000.

References: (1) Based on 23 clinical papers, 1512 cases. Bibliography on request. (2) Bush, I. M., Orkin, L. A., and Winter, J. W., in Sylvester, J. C.: *Antimicrobial Agents and Chemotherapy* - 1964, Ann Arbor, American Society for Microbiology, 1965, p. 722.

Winthrop

Winthrop Laboratories, New York, N. Y. 10016

NORTH CAROLINA MEDICAL JOURNAL

OWNED AND PUBLISHED BY

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 28

MAY, 1967

NUMBER 5

The Medical Society and the Regional Medical Program in North Carolina

FRANK W. JONES, M.D.

Was the Medical Society of this State critically involved in the initial planning and the activation of the program which evolved into what is now the Association for the North Carolina Regional Medical Program?

It was, and here is how it was.

Antecedents

The Medical Society of the State of North Carolina considers itself presently to be an organization which is alert to the evolving trends and patterns in the health care field. The phrase "in these changing times" is one that has been used in many epochs of civilization and in very recent years has possibly been overworked in the spoken and written language to the point that it has become almost trite. These present times are, however, changing, and changing rapidly. An expectant and even aggressive involvement of this Medical Society in areas of socioeconomic health care planning, implementation, and delivery has become a parallel and obligatory *must* to our continuous participation in scientific developments in the medical care field.

For several years there has been thinking by individuals of this Society with reference to the need for a planned effort directed toward:

1. Definitions of needs in the health care field.
2. A common meeting ground between

the physician on the firing line—the man or woman in private practice outside the medical school milieu—and those who determine the curricula and teach the students of medicine and the allied fields, and ultimately with those people who man the several governmental bodies involved in the health care field.

This issue is devoted to papers on the North Carolina Regional Medical Program. For editorial comment see page 198.

3. The development of a plan whereby the combined intelligence of each sector could be utilized in a cohesive manner to the end that optimal effort in basic and continuing education and in the modalities of the delivery of health care could be effectuated with the least lost motion and waste of time, money, and effort, and, in particular, with the establishment of a mechanism for the further dissemination of fresh knowledge, in both the scientific and sociomedical fields with the least amount of duplication of effort.

By a circumstance of fortune, a few years ago three old friends became the deans of three medical schools at about the same time. It was with a rare meeting of minds that they determined that the demand of the future of medicine and medical education was too great for the schools to continue to carry on in the pattern considered to be correct for many years, that pattern being direct competition. Out of this grew a proposal to pool their resources in certain areas. From this decision Project ICE arose—Inter-university Continuing Education. Thus the crack in the monolith was begun. There

* President, Medical Society of the State of North Carolina

Request for reprints to West Lake Hills, Newton, N. C.
28658

seemed to be also a climate of developing rapport between organized medicine as an entity representing all the physicians on one hand and the halls of academe on the other.

In an attempt to accomplish the several aims enumerated earlier in this article, conversations were spontaneously developed between the officials of the Medical Society and the deans and representatives of the medical schools.

It was at about this time that consideration was being given in Washington to a program involving three categorical diseases—heart, stroke, and cancer. President Johnson met with his Commission on Heart, Stroke, and Cancer for the first time in April of 1964. This commission made its first report on December 9, 1964.

The conversations in this state on a somewhat parallel track but without categorical disease delineation were continuing. Soon House Bill 3140 and Senate Bill 596 were developed.

Advisory Council of Health Professions

A more formal conversation intra-state was initiated on August 10, 1965, on the Duke campus between the representatives of the medical schools and of the Medical Society. The proposed legislation offered a means of funding our concepts. Then, on August 26, 1965, at an all-day called meeting of the Executive Council of the Medical Society, an in-depth discussion of the proposed legislation was held. Presentations were made by the representatives of the schools and of the Society. Arising out of these discussions, the Council adopted a resolution that the Society establish an Advisory Council of Health Professions, and also encouraged the participation of other disciplines in this Council. Basically, the Advisory Council was to study any and all methods of achieving improved health care in North Carolina and was to be composed of ten members, three from the schools, three from the Society, one each from the Board of Health and the Medical Care Commission, and two from the hospital field.

From this initiation developed the group

which met informally many times subsequently. Then when P. L. 89-239 was enacted and signed, after careful and considered modifications in the bill had been made at the suggestion of medicine at the national level and in the wisdom of the reviewing committee of the Congress, we were ready with initial planning phased in and with proposed projects for consideration. Very early in our considerations, the planning know-how of the Social Research Section at one of our universities was brought into the picture.

When the project evolved into an Association for the Regional Medical Program, a Board of Directors was set up in the organizational structure. Of the 17 members of this body, the Medical Society was represented by 6 physicians with no connection with medical schools or governmental bodies. It should also be pointed out that of the 17 members, 15 hold the degree of Doctor of Medicine. The Advisory Council as constituted under the provisions of P. L. 89-239 is a more broadly based group, but even here the physician on the firing line of the delivery of care is well represented. In addition to this, the Advisory Task Forces of the several fields of endeavor within the program have satisfactory representation from the physician in the private practice sector. Further, even the planning survey program was critically overviewed by physicians involved in the delivery of care at the local level.

Continuing education and quality delivery of health care are probably the major concepts of our group in North Carolina. These concepts are also apparently the intent of the Act.

Finally, and in conclusion, the Medical Society representing the physicians of North Carolina is involved in the Regional Medical Program. It was involved in a somewhat similar program *before* Heart, Stroke, and Cancer was birthed, and it will continue to be involved, working with the representatives of the public and the other deliverers of health care and the involved state governmental agencies in a continuing program directed toward quality care at all levels. We

do not consider that our ultimate effort is limited to categorical disease; however, we are delimited presently while operating under the confinement of the regulations of P. L. 89-239, which is the mechanism for funding presently available to us.

It will be noted that names were not used

in this article. To those people whose individual vision and work in North Carolina made this program an exciting possibility, apology is made and honor is granted. It was, however, a team effort and the Medical Society did play a large role in the development of this program in North Carolina.

The Regional Medical Program: An Opinion

ROBERT A. ROSS, M.D.*

The details concerning the inception, purpose, activation, progress, and plans for the future course of the Regional Medical Program have been documented by others. This communication is more an article of faith in our own group engaged in the management, maintenance, and policy planning of the North Carolina program.

There is perhaps some justification for mild disquietude on the part of doctors living in an era when the influence of social sciences and social forces are becoming more evident in a profession nurtured in physical sciences and humanistic attitudes. The title of a publication, "Creative Federalism and Health Programs for the Poor,"¹ written by a doctor long in private practice and now in the Bureau of Health, Education, and Welfare, compels attention and requires perusal for reconciliation and explanation. The multiplication of health laws with supporting funds tax the credulity of those wedded to a status quo. The necessity of negotiations, the striving for definitions, the adjustments needed in order to conform, the imposition of a change in practice and thinking that was believed good and precious, do explain in part any querulousness manifest in the attitude of a doctor.

This trend is recognized even in special medical groups,² and suggestions are made regarding the possible manner in which a physician may respond to the situation: by insulating himself and hoping that the gov-

ernment will go away, which is difficult; by organizing and opposing, which may delay change temporarily; by studying, trying to comprehend and, hopefully, guiding and directing the trend. The latter course, in the opinion of the author, offers the best chance for successful adjustment and participation.

It is apparent that governmental agencies certainly need the help of organized medicine, and probably want it. There are medical men in high places in the government who are forthright and candid.³ The Regional Medical Program has evolved into an understandable, workable plan, is directed by people we know, and does offer a genuine opportunity to "plan and provide an environment for coordinating the health resources in order to assure the availability of the best medical care to all persons."

Not since the Good Health program has this state seen a more inclusive, altruistic, and purposeful coordination of agencies and effort, and never has a program had better chance for success. From this point onward it is our obligation to recognize those who have brought this about, to sustain their efforts, to encourage involvement, to choose projects wisely and carry them to successful completion, and to recall that even Saint John could not be "all things to all men."

References

1. Lee, R.: Creative Federalism and Health Program, The PHAROS of A.O.A. 30:2 January, 1967
2. Taylor, C.: Inaugural Address, Obstet Gynec 29:420 (March) 1967.
3. Marston, R. Q., and Yordy, K: A Nation Starts A Program: Regional Medical Programs, 1957-1966; (b) Marston, R. A., and Mayer, William D., The Interdependence of Regional Medical Programs and Continuing Education, J Med Educ 42:119 (Feb), 1967

*President-elect, Medical Society of the State of North Carolina.

Request for reprints to Obstetrics and Gynecology Clinic, University of North Carolina School of Medicine, Chapel Hill, N. C. 27515.

North Carolina Regional Medical Program

MARC J. MUSSER, M.D.*

Introduction

The Heart Disease, Cancer, and Stroke Amendments (PL 89-239) to the Public Health Service Act, signed into law by the President on October 6, 1965, were interpreted initially as a launching of an all-out attack by the Congress of the United States upon the nation's three major killing diseases—heart disease, cancer, and stroke. Subsequent study of the provisions of the law, and particularly the consideration of it in relationship to previous national health legislation, has revealed its much broader significance.

Dr. George James, dean of the Mount Sinai School of Medicine and a member of the National Institutes of Health Regional Medical Program Council, has written: "The more I am associated with it (the program) the more convinced I become that it has broader and more profound implications for the future of medical practice and the quality and distribution of medical care than any health legislation enacted by Congress—including medicare. It is important to realize that its over-all, obvious goal is universal access to comprehensive health and medical care of high quality."¹

Certainly, of all the health legislation enacted since World War II, PL 89-239 is the first which is concerned primarily with the wide dissemination and expeditious clinical application of new medical knowledge, the coordinated utilization of all health sciences resources, and a realistic and accelerated program of augmentation of the health sciences manpower necessary to meet the tremendously increased needs which exist. Because of these far-reaching objectives, the law in its implementation has come to be known as the Regional Medical Program. Also it seems to have captured the public

fancy by its promise to accomplish the long hoped for full and concerted mobilization of medical knowledge and resources for the securing of the nation's health.

National legislation responds to the existing urgency of the needs of our society. Consequently, the sequential history of legislation is inclined strongly to have an evolutionary significance. The nature and effect of health legislation prior to PL 89-239—and also PL 89-749 (the Comprehensive Health Planning Program) created a state of affairs which made the enactment of these laws particularly timely and appropriate.

Two decades of change

For medical science and the practice of medicine, the two decades since World War II have constituted a period of rapid and revolutionary development and change. A tremendous increase in scientific knowledge, ever-expanding socio-economic forces, and the expectations and demands of an increasingly well informed society have initiated major modifications of all elements of health care and of health sciences education and training. Health legislation both encouraged and reflected these changes.

The Hill-Burton Act (Hospital Survey and Construction Act, PL 725, 79th Congress) of 1946, and its subsequent amendments, while providing for surveys of needs and planning for various types of health facilities and services, have been identified primarily with the provision of matching funds for construction of hospitals, clinics, diagnostic and treatment centers, nursing homes, etc. Similar legislation has supported physical facilities for the care of the mentally retarded, community mental health centers, research, and new medical and dental schools as well as expansion of those now in existence. In the latter instance, provisions also were made for student loans, scholarships, and some operating funds where the size of classes was increased.

Legislation concerned with medical research has resulted in an unprecedented rise

* Executive Director, the Association for the North Carolina Regional Medical Program.

Request for reprints to 4019 North Roxboro Road, Durham, N. C. 27704

in annual appropriations for grants and other forms of support, both for research and for research training, and also in an expansion of the scope of interests and activities of the Public Health Service, particularly the National Institutes of Health. While support is provided for research throughout the broad range of the health sciences, it is of interest that the Congress has seemed to prefer to do this through a categorically oriented structure. Thus the organization of the National Institutes of Health began with the Cancer Institute and subsequently added institutes for heart disease, nervous diseases and blindness, mental disease, infectious diseases and allergy, dentistry, and so on.

Other legislation has provided for the extension and improvement of practical nurse training, community health services, particularly for the aged, the staffing of community mental health agencies, the training of the handicapped, immunization programs, and health services for migratory workers.

Finally, the Social Security Amendments of 1965, PL 89-97, 89th Congress, providing under Title XVIII hospital insurance and supplementary medical benefits programs for the aged (Medicare) and under Title XIX an expanded program of medical assistance to a potentially much broader segment of the population, have added an entirely new type of health legislation which all of us are now struggling to interpret and implement intelligently.

Thus, over the past two decades a considerable volume of heterogeneous, but far-reaching, health legislation has accumulated. It has expanded considerably the physical facilities for health services, it has attempted to augment certain categories of health services manpower, and by its stimulation of research in both the life and physical sciences, it has caused an explosive growth of knowledge which is rapidly changing the patterns of medical practice and of medical—or, more broadly, health sciences—education.

Growing deficiencies

Concurrently, studies conducted nationally or at state levels have pointed up the grow-

ing deficiencies in medical manpower, the patterns of ineffectiveness or unavailability of health services, the problems created by increasing specialization in medicine, and the spiraling costs of hospital care. The degree of concern with these problems has been reflected in the more recent annual Health Messages to the Congress by the President and by the responsiveness of legislation, particularly that of the 88th and 89th Congresses. In January 1965, the President told the 89th Congress:

Our first concern must be to assure that the advance of medical knowledge leaves none behind. We can—and we must—strive now to assure the availability of and accessibility to the best health care for all Americans, regardless of age or geography or economic status.

With this as our goal, we must strengthen our Nation's health facilities and services, assure the adequacy and quality of our health manpower, continue to assist our States and communities in meeting their health responsibilities, and respond alertly to the new hazards of our new and complex environment.

We must, certainly, continue and intensify our health research and research facilities. Despite all that has been done, we cannot be complacent before the facts that—

Forty-eight million people now living will become victims of cancer.

Nearly 15 million people suffer from heart disease and this, together with strokes, accounts for more than half the deaths in the United States each year.

Twelve million people suffer arthritis and rheumatic disease and 10 million are burdened with neurological disorders.

Five and one-half million Americans are afflicted by mental retardation and the number increases by 126,000 new cases each year.

In our struggle against disease, great advances have been made, but the battle is far from won. While that battle will not end in our lifetime—or any time to come—we have the high privilege and high promise of making longer strides forward now than any other generation of Americans.

The measures I am outlining today will carry us forward in the oldest tradition of our society—to give “an attention to health” for all our people. Our advances, thus far, have been most dramatic in the field of health knowledge. We are challenged now to give attention to advances in the field of health care—and this is the emphasis of the recommendations I am placing before you at this time.²

This set in motion the actions that led to the enactment of such laws as the Medicare Bill, further extension and amendment of the Hill-Burton Program, the Community Mental Health Centers Program, several

programs of health professional education assistance, and the Heart Disease, Cancer, and Stroke Amendments of 1965.

In his Health and Education message of March, 1966, the President stated:

A nation's greatness is measured by its concern for the health and welfare of its people. Throughout the history of our democracy, this commitment has grown and deepened.

The education of our people is a national investment. The health of our people is essential to the pursuit of happiness.

The focus of our efforts is the individual and his family, living in their own community. To meet their health needs requires the cooperation of many agencies, institutions, and experts—of State and local government, of doctors, nurses, and paramedical personnel.

I recommend to Congress a program of grants to enable States and communities to plan the better use of manpower, facilities, and financial resources for comprehensive health services. This program would begin in fiscal 1968.³

Subsequently, the 89th Congress enacted PL 89-749, the Comprehensive Health Care Program to begin in 1966—not 1968! The intent of this major and far-reaching law, now in the very early stages of implementation, is to accomplish the coordinated planning at every level of government necessary to promote and assure the highest level of health attainable for every person by the marshaling of all health resources, manpower, and health facilities. This law, concerned with the broad aspects of public health, incorporates many of the concepts and principles of the Regional Medical Program. Both are responsive to the present temper of society; together, because of their intent to consolidate the gains of the past in a concerted attack upon the health needs of the present, they well may come to be considered as the major health advances so far in this century. PL 89-749 provides for broad and coordinated health planning, predominantly at administrative levels; PL 89-239, the Regional Medical Program, provides for operational activities restricted to certain categorical areas of medical practice to be designed and carried out by those primarily responsible for medical care, research, and education—the medical profession and its educational and research institutions. In so doing, it challenges the medical

profession to assume the high degree of leadership necessary to assure accomplishment of the designated objectives.

Public Law 89-239—The Heart Disease, Cancer, and Stroke Amendments of 1965

The purpose of PL 89-239 is to make universally available the latest advances in the diagnosis and treatment of heart disease, cancer, stroke, and related diseases. This is to be accomplished by the establishment of regional programs of cooperation in research, training, continuation education, and demonstration activities in patient care among medical schools, clinical research institutions, hospitals, and practicing physicians.

The law authorized, beginning in fiscal year 1966, a three-year, \$340 million dollar program of grants, for the planning and establishment of regional medical programs. These grants would provide support for cooperative arrangements which would link major medical centers—such as medical schools and affiliated teaching hospitals—with clinical research centers, local community hospitals, and practicing physicians. Grants will be made for planning, feasibility studies, and pilot projects, directed at (1) the mobilization of resources to meet existing needs, (2) the mechanics of the most effective utilization of these resources, and (3) the types of education and training programs necessary to assure the availability of essential skills and manpower. Appropriate activities will be carried out in cooperation with practicing physicians, medical center officials, hospital administrators, and representatives from appropriate voluntary health agencies, and without interference with patterns of, or methods of financing, patient care, or with professional practice, or with the administration of hospitals.

The emphasis of the program is clearly on local initiative and local planning involving relevant health institutions, organizations, and agencies of the region. The legislation was purposely written in broad terms to provide essential flexibility for the regions of the Nation to exercise initiative in mobilizing their own resources to meet their own

needs as they see them. Predominant is the feature that the resources of medical schools and medical centers must be made available throughout the designated region.

The law defines a Regional Medical Program as a cooperative arrangement among a group of public or non-profit private institutions or agencies, located within a geographic area and engaged in research, training, diagnosis, and treatment relating to heart disease, cancer, stroke, and related diseases. The planning and development of the program should be done by such a group, but in addition the law also requires that an advisory council or committee be established to review and approve all elements of the program in order to assure responsiveness to existing needs. The advisory group must include practicing physicians, medical center officials, hospital administrators, representatives from appropriate medical societies, voluntary health agencies, representatives of other organizations, institutions, and agencies concerned with activities of the kind to be carried out under the program, and members of the public familiar with the need for the services provided under the program. Funds for the support of a Regional Medical Program may be granted by the Surgeon General of the Public Health Service when proper applications have been submitted upon the recommendation of the aforementioned advisory group and after they have been approved by a National Advisory Council on Regional Medical Programs.

The North Carolina Regional Medical Program

Upon enactment of PL 89-239, implementation in the State of North Carolina (designated as the Region) was initiated jointly by the deans of Bowman Gray School of Medicine, Duke University School of Medicine, the University of North Carolina Schools of Medicine and of Public Health, and the President of the State of North Carolina Medical Society. Very soon thereafter, representatives of other major health institutions, organizations, and agencies became involved in the development of the basic concepts and objectives of the program. These

concepts were identified as:

1. Representative and judicious leadership
2. Effective communication between the various groups concerned with health care
3. Improved coordination of all health-related activities within the region
4. The timely and considered dissemination of relevant new knowledge and information
5. Better utilization and appropriate augmentation of health resources to meet existing needs
6. Distribution of health service facilities to assure convenient access for all patients.

The Association for the North Carolina Regional Medical Program

For the implementation of this core concept an administrative organization representative of all health interests within the region—the Association for the North Carolina Regional Medical Program—was established. Through its Board of Directors, Advisory Council and operational office staff, the Association has the capacity to be knowledgeable of, responsive to, and concerned with the full range of health needs and resources within the region pertinent to heart disease, cancer, stroke and related diseases and thereby becomes a uniquely appropriate administrative and coordinating organization for the development, operation, and evaluation of a comprehensive, dynamic, regional medical program of sustained excellence.

The initial activities of the Association have been concerned with:

1. The identification by appropriate planning surveys of the health needs, health resources, including manpower, and related health activities within the region. These data are essential for program planning and also constitute overall baseline data against which future impacts of the Regional Program may be gauged, and
2. The establishment of the mechanisms by which the program will become operational. These include the orientation

of participants, the development of an effective communications system, the negotiation of a wide variety of cooperative arrangements, the strengthening of medical centers—community hospital relationships, and the mobilization of manpower. Also, by feasibility studies and pilot projects, new ideas and effective mechanisms for the delivery of a broader range of health services, the dissemination of knowledge and information, and the coordination and evaluation of the program are being developed and tested.

From the beginning, the experience of the North Carolina Regional Medical Program has been characterized by the enthusiastic cooperation of a rapidly expanding number of participants, a widespread willingness on the part of both professionals and non-professionals to contribute time and energy to the development of the program, and a remarkable interest in the ultimate substantive nature of the program.

The broad experience and expertise of many health professional and health interested individuals in the State have been utilized in the development of substantive elements of the Program. This has been accomplished through the organization of a number of subcommittees of the Advisory Council.

Members of the Board of Directors and existing subcommittees are listed in this issue at the end of the article (see page 182).

Subcommittees for Rehabilitation, Public Relations and Information, and Education and Manpower are in the process of organization and activation.

The essential role the members of these subcommittees are playing in the design of program components best suited to meet existing needs is augmented considerably by their ability to provide informed liaison with the health interests they represent and also to assist community and other health planning groups in understanding the role the Regional Medical Program might play in the health activities they contemplate.

To date, five feasibility studies or pilot

projects to evaluate the utility and effectiveness of professional activities deemed relevant to the objectives of the regional program are under way. Three of these, the Training for and Support of Intensive Coronary Care Units in Community Hospitals, a Diabetic Consultative and Educational Service, and Education and Research in Community Medical Care are described elsewhere in this issue of the JOURNAL. The others, a Central Computerized Cancer Registry and an Extension Library Support Service are in too early a phase to allow a meaningful description. Additional projects will be undertaken during the course of the year. If the preliminary evaluation of these activities is favorable, they will be made available for region-wide implementation. As data from the planning survey are analyzed, substantive elements of the Regional Program will be developed in response to the health needs and problems which are disclosed and for which resources exist or can be generated.

The Future

"The Regional Medical Programs present the medical interests within a region with an instrument of synthesis that can capitalize on and reinforce the various trends and resources seeking to make more widely available the latest advances in diagnosis and treatment of these diseases. It is the interaction of these trends at this time, rather than an abstract conceptualization, which not only justifies but requires a synthesizing force such as the Regional Medical Programs. The Regional Medical Programs represent a general concept, rather than a specific blueprint. The opportunity is presented to go beyond concept into specific planning and implementation of programs which represent pragmatic steps toward the achievement of the overall goals of the legislation. It is an opportunity to mix creative ideas and specific actions in developing improved means for advancing the health standards of the American people."⁴

The future of the North Carolina Regional Medical Program depends entirely upon the cooperative efforts of the practicing physicians, the allied health professions, and

the health institutions, organizations and agencies. At this point in time, no one is fully aware of the ultimate nature of the program. It is possible, however, to consider some of the possibilities—and some of the problems.

The planning survey now under way will provide essential data for determining the nature and magnitude of patient needs, and the needs in terms of additional knowledge, skills, and manpower of those responsible for providing health services. In a similar manner, information regarding resources for expanding and augmenting health services and for education and training will become available.

In the meantime efforts are being directed toward the establishment of cooperative arrangements between the medical schools, hospitals, health organizations and agencies, practicing physicians, and communities, so that the substantive elements of the program can be more effectively implemented. Such relationships should allow for more readily available and diversified consultative services, improvement of laboratory and radiology resources, advice and guidance in the establishment of new facilities, such as intensive and coronary care units, heart and cancer clinics, etc, and the establishment of efficient communications and information systems.

Progress has been made in identifying the many voluntary organizations concerned in one way or another with health, health planning, and health services. Hopefully, their interests, distribution, skills, knowledge, and manpower can be brought together into a better coordinated and more cohesive resource for meeting the health needs of the people

Coordination of educational activities has been initiated. There is much to be done in the development of new programs in continuing education for all the health professions in order to assure the most efficient and effective dissemination of new knowledge. Modalities such as two-way, closed circuit television, video systems and radio networks require evaluation. Education and training programs for health skills and man-

power known to be in short supply must be expanded; facilities and curricula will need to be developed for the training of manpower in new skills as they are identified. The sources of additional manpower for these programs must be cultivated.

The major impact of these activities when they have been implemented will be in areas and communities where health care facilities exist. But what is to be done in the rural community where there are no, or only minimal, health care facilities? Where do we find the necessary additional medical manpower in the face of the already existing shortages? Undoubtedly, there are means by which the regional program concept might make a rural practice more attractive to a physician. Even though it did, would it ever occur in sufficient volume as to be meaningful?

Also, there has been considerable discussion at national levels about the better utilization of health manpower—the idea that the physician might relegate certain of his activities to a trained subordinate, or that the nurse might assume new and more important responsibilities while turning over less demanding duties to a technician or a specially trained attendant. These, perhaps, are good ideas, and already some progress in their implementation has been made. However, before the value of these can be ascertained, considerable practical evaluation will have to be done. Certainly it becomes increasingly clear that the problem very likely will be solved by the development of entirely new patterns of providing health care in the more remote and less populated areas. What should be the nature of these?

Conclusion

As planning for the Regional Medical Program has progressed, an increasing number of questions and problems have come into sharper focus. At the present point in time, there are many more questions and problems than there are answers or solutions. General awareness of this circumstance may account for the acceptance of the Regional Medical Program with so much enthusiasm and hope. Also, there has been a growing recognition that the development of the program is the responsibility of the entire medical profes-

sion and its institutions, and not that of a medical school, or the state medical society, or of a committee. There is no question of the profession's ability to do the job. The important step is to direct our total talent and energy to it. The job—well done—will reassert and secure our leadership in health affairs and assure an ever improving state of national health.

References

1. James, G.: Implications of the Heart Disease, Cancer, and Stroke Program: An Interpretation, *Med Opinion Rev* 2:112-123 (Oct) 1966.
2. Advancing the Nation's Health: Message from the President of the United States to the House of Representatives. 89th Congress, 1st Session, Document No. 44, Washington, D. C., Jan. 7, 1965.
3. Health and Education: Message from the President of the United States, House of Representatives, 89th Congress 2nd Session, Document No. 395, Washington, D. C., March 1, 1966.
4. Guidelines, Regional Medical Programs, U. S. Dept. of Health, Education, and Welfare, July, 1966.

North Carolina Regional Medical Program

BOARD OF DIRECTORS

Dr. Manson Meads, Dean
Bowman Gray School of Medicine
Winston-Salem, North Carolina

Dr. Isaac M. Taylor, Dean
University of North Carolina
School of Medicine
Chapel Hill

Dr. Louis Shaffner
Bowman Gray School of Medicine
Winston-Salem

Dr. Robert H. Shackelford
General Practice
115 West Main Street
Mount Olive

Mr. James T. Barnes, Executive Secretary
N. C. Medical Society
203 Capital Club Bldg.
Raleigh

Dr. Ernest Craige
N. C. Memorial Hospital
Chapel Hill

Mr. Bill Henderson
N. C. Medical Care Commission
Raleigh

Dr. Fred Mayes, Dean
School of Public Health
University of North Carolina
Chapel Hill

Dr. Harvey L. Smith
Social Research Section
University of North Carolina
Chapel Hill

Dr. Jacob Koomen, Director
State Board of Health
Raleigh

Dr. John T. Gentry, Assistant Dean
School of Public Health
University of North Carolina
Chapel Hill

Dr. E. Harvey Estes, Jr.
Department of Medicine
Duke University Medical Center
Durham

Dr. George W. Paschal, Jr.
Chairman, Advisory Council
1110 Wake Forest Road
Raleigh

Dr. Ladd W. Hamrick, Jr.
Internal Medicine
194 Lake Concord Road
Concord

Dr. William G. Anlyan, Dean
Duke University School of Medicine
Durham

Dr. Frank W. Jones
President, State Medical Society
381 Somerset Drive
Newton

Dr. Robert A. Ross
President-Elect, State Medical Society
N. C. Memorial Hospital
Chapel Hill

Mr. John Rankin
Charlotte Memorial Hospital
Charlotte

Dr. Marc J. Musser
Association for the North Carolina
Regional Medical Program
Durham

ADVISORY COUNCIL

Voluntary Agencies

N. C. State Nurses Association
Dr. Eloise R. Lewis, President
N. C. State Nurses Association
Greensboro

N. C. Public Health Association
Dr. E. H. Ellinwood, Health Director
Greensboro

N. C. Society of Medical Technologists
Miss Marue Summerlin, President
Greensboro

N. C. Physical Therapy Association
Mr. James L. Austin, President
Winston-Salem

N. C. Health Council
Mr. Elisha M. Herndon, President
Hospital Care Association
Durham

N. C. Dental Society
Dr. J. Homer Guion, President
Charlotte

N. C. Division of American Cancer Society

Dr. Mark M. Lindsey
Hamlet

N. C. Heart Association

Mr. W. James Logan, Executive Director
Chapel Hill

N. C. Pharmaceutical Association

Mr. C. D. Blanton, Jr., President
Kings Mountain

Official Agencies**N. C. Division Vocational Rehabilitation**

Dr. L. L. Schurter, State Medical Consultant
Raleigh

N. C. Board of Public Welfare

Mr. Russell R. Chambers, Director
Division of Medical Services
Raleigh

N. C. Board of Health

Dr. Jacob Koomen, Director
Raleigh

Representatives of the Public

Mr. Francis C. Bourne, Jr.
Murphy

Mr. Thomas Bridgers
Wilson

Mr. R. Harold Staton
Greenville

Mr. Thomas H. Wright, Jr.
Route 3, Wilmington

Physicians at Large

Dr. George W. Paschal
Raleigh

Dr. Paul Sanger
Charlotte

Dr. Frank Sullivan
Wilson

Dr. Joseph Walker
Winston-Salem

Hospital Administration

Mr. John Rankin, Director
Charlotte Memorial Hospital
Charlotte

State Medical Society Official

Dr. Robert A. Ross, President Elect
Chapel Hill

Medical Center Officials (Ex Officio)

Dr. Manson Meads, Dean
The Bowman Gray School of Medicine
Winston-Salem

Dr. William G. Anlyan, Dean
Duke University School of Medicine
Durham

Dr. Isaac M. Taylor, Dean
University of N. C. School of Medicine
Chapel Hill

Subcommittee for Heart Disease (12 members)

Dr. Horace H. Hodges
(State Medical Society)
Charlotte

Dr. Connell G. Garrenton
(State Medical Society)
Bethel

Dr. Ralph N. Feichter
(N. C. Heart Association)
Waynesville

Dr. Robert Headley
(Bowman Gray School of Medicine)
Dept. of Medicine
Winston-Salem

Dr. William A. Robie
(State Board of Health)
Raleigh

Dr. Herbert Harned
(University of North Carolina School of Medicine)
Dept. of Pediatrics
Chapel Hill

Dr. Andrew G. Wallace
(Duke University School of Medicine)
Dept. of Medicine

Dr. Robert E. Whalen
(Duke University School of Medicine)
Dept. of Medicine
Durham

Dr. James W. Woods
(University of North Carolina School of Medicine)
Dept. of Medicine
Chapel Hill

Dr. Paul Sanger
(Regional Medical Program Advisory Council)
Charlotte

Dr. John McLeod
(Memorial Mission Hospital)
Dept. of Pathology
Asheville

W. James Logan
(Regional Medical Program Advisory Council)
Chapel Hill

Subcommittee for Cancer (11 members)

Dr. Donald Hayes
(Bowman Gray School of Medicine)
Winston-Salem

Dr. George D. Wilbanks, Jr.
(Duke University School of Medicine)
Durham

Dr. James F. Newsome
(University of North Carolina School of Medicine)
Chapel Hill

Dr. Fleming Fuller
(American Cancer Society, North Carolina Division)
Kinston

Dr. William A. Robie
(State Board of Health)
Raleigh

Dr. Charles D. Watts
(State Medical Society)
Durham

Dr. Donald B. Koonce
(State Medical Society)
Wilmington

Dr. D. E. Ward, Jr.
(State Medical Society)
Lumberton

Dr. James E. Hemphill
(State Medical Society)
Rockingham

Dr. Herbert Z. Lund
(Moses Cone Memorial Hospital)
Pathology
Greensboro

Dr. Mark Lindsey
(Regional Medical Program Advisory Council)
Hamlet

Subcommittee for Stroke (12 members)

Dr. William T. MacLauchlin
(State Medical Society)
Conover

Dr. Ernest B. Page, Jr.
(State Medical Society)
Raleigh

Dr. James A. McFarland
(N. C. Heart Association)
Rutherfordton

Dr. William A. Robie
(State Board of Health)
Raleigh

Dr. Robert A. Gregg
(Duke University School of Medicine)
Rehabilitation
Durham

Dr. Thomas Scott
(University of North Carolina School of Medicine)
Division of Neurology
Chapel Hill

Dr. Robert E. McMasters
(Duke University—VA)
Chief, VA Stroke Center
Durham

Dr. William M. McKinney
(Bowman Gray School of Medicine)
Dept. of Neurology
Winston-Salem

Dr. John Dorsett, Jr.
(N. C. Heart Association)
Charlotte

Dr. Frank N. Sullivan
(Regional Medical Program Advisory Council)
Wilson

W. James Logan
(Regional Medical Program Advisory Council)
Chapel Hill

Miss Lydia Holley
(University of North Carolina School of Public Health)
Physical Therapy
Chapel Hill

Subcommittee for Dentistry (8 members)

Dr. James W. Bawden
(Dean, University of North Carolina School of
Dentistry)
Chapel Hill

Dr. Bennie D. Barker
(University of North Carolina School of Dentistry)
Chapel Hill

Dr. Donald W. Warren
(University of North Carolina School of Dentistry)
Chapel Hill

Dr. W. P. Webster
(University of North Carolina School of Dentistry)
Chapel Hill

Dr. Ed U. Austin
(N. C. Dental Society)
Charlotte

Dr. Walter H. Finch, Jr.
(N. C. Dental Society)
Henderson, N. C.

Dr. Ernest A. Pearson, Jr.
(State Board of Health)
Raleigh, N. C.

Andrew Cunningham
(N. C. Dental Society)
Raleigh

Subcommittee for Hospitals (12 members)

John W. Rankin, Chairman
(Charlotte Memorial Hospital)
Charlotte

Charles Frenzel
(Duke University Medical Center)
Durham

William Ivey
(North Carolina Memorial Hospital)
Chapel Hill

Thomas R. Howerton
(Wilson Memorial Hospital)
Wilson

Reid T. Holmes
(North Carolina Baptist Hospital)
Winston-Salem

Robert M. Gantt, Jr.
(Haywood County Hospital)
Waynesville

J. Grayson Brothers
(Grace Hospital)
Morganton

William O. Moser
(Morehead Memorial Hospital)
Leaksville

Earl Bullard
(Columbus County Hospital)
Whiteville

John C. Blanton
(Rowan-Chowan Hospital)
Ahoskie

William F. Andrews
(Memorial Hospital of Wake County)
Raleigh

Roy R. Creech
(Cleveland Memorial Hospital)
Shelby

Intensive Coronary Care Units in Community Hospitals: A Pilot Project

JAMES W. WOODS, M.D.

There is a rapidly expanding interest in monitored units for the care of patients with acute myocardial infarction, heart block, and potentially lethal arrhythmias. Several hospitals in the state have such units, other hospitals are making plans for them, and many more are debating the advisability of establishing units. Since this is a new dimension in medical care, many problems are as yet unsolved, and there is a need to formulate guidelines and establish sources of advice relative to electronic equipment, architectural design, training of the required personnel for staffing, the medicolegal implications, and so forth.

Operational Plan

In an attempt to meet these needs, the North Carolina Regional Medical Program has undertaken the development of an operational plan for providing an ongoing advisory and educational service to community hospitals in North Carolina. Planning activities, already under way, have the following goals:

1. To work out a standard operating procedure by which, through designated consultants, community hospitals may assess their obligations and resources for the operation of coronary care units (CCU). This will involve a survey of the hospital census in order to determine the need and number of beds required, of the physical plant for design of an efficient unit, and for consultation regarding equipment and personnel.
2. To devise a uniform system of record-

keeping for CCUs in the region which will permit central computer-based statistical evaluation of the utilization of the units, the types of patients admitted, and the effectiveness of the units in facilitating the therapy of various conditions treated in them.

3. To design a region-wide training program for the physicians, nurses, and non-professional personnel needed for staffing.

4. To design specific courses for training programs, and to accumulate and develop teaching materials for these courses, utilizing such teaching aids as television tapes, movies, slides, tape-recorded ECG arrhythmias, and printed materials.

5. To investigate, through consultation with the law schools, what will need to be done about the legal responsibilities of nurses and non-professional personnel who may become involved in resuscitation procedures in the absence of a physician. There is also a problem regarding the obligation of hospitals to provide such facilities. This may involve recommendations for new state legislation, amendments of medical and nursing practice acts, etc.

6. To devise, with the help of the field facilities and publicity facilities of the North Carolina Heart Association, an ongoing program for discovering the needs of local units, and organizing and promoting attendance of personnel at appropriate original and refresher courses. This work will enable the medical and nursing schools to keep abreast of needs in the community hospitals and to update community units and personnel as new developments occur. The Heart Association is suited for this work because of its wide-range coverage of the state with professional and volunteer workers interested in heart disease.

Organization

In order to achieve these goals, an or-

From the Department of Medicine, University of North Carolina School of Medicine, Chapel Hill.

* Project Committee: James W. Woods, M.D., Chairman, Chapel Hill; J. Gilmer Mebane, M.D., Rutherfordton; John G. Smith, M.D., Rocky Mount; James C. Bruce, M.D., Greensboro; Andrew Wallace, M.D., Durham; Ann Jacobansky, R.N., M.Ed., Durham; Robert Headley, M.D., Winston-Salem; Elizabeth Kemble, Ed.D., Chapel Hill, W. James Logan, Chapel Hill.

Request for reprints to 4019 North Roxboro Road, Durham, N. C. 27704.

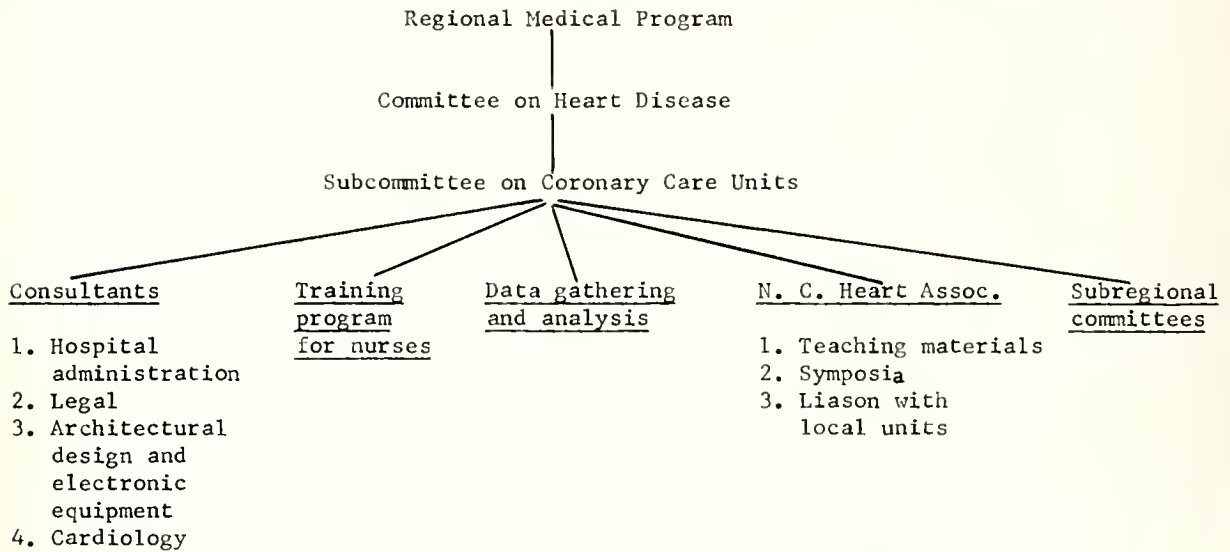


Fig. 1. Organizational Structure of the North Carolina Regional Medical Program.

ganizational plan has been formulated and is shown schematically in Figure I.

Consultants. The availability of consultants to community hospitals would appear to be an immediate pressing need, and consequently their recruitment has already been initiated. An administrator from one of the medical schools with personal experience in the problems relative to CCUs will be made available for consultation with hospital administrators. A member of one of the law faculties has been retained on a part-time basis. He will become familiar with the legal problems involved, keep abreast of litigation relative to this area, and will provide information and counsel to those who wish it.

The matter of expert advice relative to electronic monitoring equipment can probably best be dealt with through a panel of electronic engineers and cardiologists, who will evaluate the equipment and service facilities of a large number of manufacturers and make this information available to the region as requested. Finally, a panel of cardiologists from both the medical centers and the larger community hospitals will become available for advice related to medical care in these units.

The training of nurses. It is probable that one of the University Schools of Nursing will shortly receive U. S. Public Health Service support for the training of CCU nurses. If support is received, up to 80 nurses per year

will be accepted for a four-week course, including classroom and on-the-job instruction.

Data-gathering and analysis. A unit has been established under the full-time direction of Dr. Harvey Smith of the University of North Carolina Sociology Department and has been functioning for several months. This unit services the entire Regional Medical Program but will be of invaluable help to the CCU program. Data regarding coronary heart disease is needed not only for the region (state) as a whole, but also for individual hospitals and subregions in order that an intelligent regional plan for improved care can be devised.

The North Carolina Heart Association is fully prepared to make its facilities and resources available for this project in the areas shown in Figure 1.

Subregional committees. Some degree of decentralization of effort is judged desirable, and to this end it is hoped that areas of the state will divide themselves into "subregions." In this way, a given area might select a committee of interested physicians who would plan for the needs of the various community hospitals included. The larger community hospitals might appropriately serve as centers for these areas. With such subregional planning, unnecessary reduplication of facilities and ineffectual and expensive efforts would be avoided.

Conclusion

This brief survey attempts to outline the initial planning efforts of the project committee of the North Carolina Regional Program. All North Carolina hospitals are being invited to send representatives to a forum to be held in conjunction with the Annual Scientific Session of the North Carolina Heart Association in Durham on May 18, 1967. At this time, the current status of planning will be briefly reviewed, organization on a statewide basis will be initiated, and, most importantly, an opportunity will be given to interested physicians to express opinions and to influence the direction of

further efforts. It is most appropriate that the forum will follow a panel discussion on coronary care units by North Carolina experts and Dr. Lawrence Meltzer of the pioneer CCU at Presbyterian Hospital in Philadelphia. All interested individuals, whether physicians, nurses, or hospital administrators, are invited to attend.

It is apparent that the Regional Medical Program offers a unique opportunity for the medical centers, community hospitals, and private and governmental health agencies to join forces in the improvement of medical care and in an exciting attack upon the foremost cause of death—coronary heart disease.

Diabetic Consultation and Educational Services: A Feasibility Study

T. FRANKLIN WILLIAMS, M.D.,* AND JULIA D. WATKINS, R.N., M.P.H.*

The statewide Diabetic Consultation and Educational Services, under the Regional Medical Program in North Carolina, is a project aimed at helping to improve the management of diabetes mellitus and of related problems in persons with this disease. The benefits hoped for are of three types: (1) *direct services* to physicians and other local health personnel through consultation and the provision of educational services to physicians for their patients; (2) educational opportunities, in terms of helping practicing physicians and other health personnel improve their methods and services in dealing with diabetic patients; and (3) evaluative and epidemiologic benefits, in terms of assessing the degree to which this program reaches diabetics who might benefit by what it has to offer and the degree to which the aims are accomplished.

As is well known, diabetes is a common disorder, affecting 2% to 4% of the population, or 90,000 to 180,000 North Carolinians. The association of diabetes with, and its

contributory role in, degenerative disorders of the cardiovascular, neurologic, ocular, and renal systems is also well recognized.

The clinical experience of physicians who see many diabetic patients suggests that both the degree to which patients carry out recommended measures and the degree to which good control is achieved leaves much to be desired. Recent studies support this view.¹⁻³ Two thirds or more of diabetic patients taking insulin appear to be in less than adequate day-to-day control, and gross inadequacies exist in every element of their performance of recommended therapy.

One of the basic conclusions of these studies is that more knowledge is needed about the disease itself in order to allow more effective recommendations for management. But it is also clear that improvement is needed in carrying out what is already known. The program proposed is directed toward the latter need.

Most practicing physicians who assume primary and continuing responsibility for patients have a number of diabetic patients under their care. Among them are likely to be a few with difficulties about which the physician would welcome consultative help

From the Department of Medicine, The School of Medicine (Dr. Williams) and the School of Public Health (Miss Watkins) the University of North Carolina, Chapel Hill.

Request for reprints, North Carolina Memorial Hospital, Chapel Hill, N. C. 27515 (Dr. Williams).

if it were readily available. For a larger number of such patients, he is likely to welcome educational services for the patients themselves, if offered by nurses, dietitians or nutritionists, and health educators, all especially trained to work with diabetic patients. It also seems likely that physicians and other health personnel would welcome educational conferences about problems in diabetic management, conferences which would focus on the problems presented by the patients actually seen for any of the above services.

With these possible benefits in mind, a proposal was submitted to the Regional Medical Program and approved for planning and conducting tests of feasibility. The first formal action was the first meeting of the Advisory Committee for this proposal, held on January 12, 1967. This committee is composed of the following:

1. Faculty members with a particular interest in diabetes from each of the three medical schools in the state: Dr. Reuben Bressler, Duke University Medical Center; Dr. Emery Miller, Jr., Bowman Gray School of Medicine; Dr. T. F. Williams, the University of North Carolina School of Medicine.
2. Practicing physicians who specialize in diabetes and related problems: Dr. Charles W. Styron, Raleigh; Dr. Luther Kelly, Jr., Charlotte.
3. A practicing cardiovascular surgeon: Dr. Francis Robieshek, Charlotte.
4. Other practicing physicians: Dr. Michael J. Dugan, Siler City; Dr. Archie Y. Eagles, Ahoskie.
5. Representatives of the Chronic Disease Section, N. C. State Board of Health: Dr. William A. Robie and Dan M. Spain.
6. Representatives of the field of public health nursing: Miss Julia Watkins, U.N.C. School of Public Health, and Mrs. Jean Lassiter, State Board of Health.

Proposals of the Advisory Committee

The highlights of the discussion at this meeting were as follows:

I. Educational sessions for diabetic patients

There was considerable interest in the possibility of making available to physicians educational and other supportive services to help them work with their own diabetic patients. Specifically, it was suggested that organized and scheduled teaching and educational sessions be planned for various communities. These would be staffed by Public Health nurses or other nurses, nutritionists or dietitians, and health educators specially trained in diabetic education. Physicians could advise their patients to attend these sessions. Various teaching aides would be used, and both individual and group discussions would be held. It would be possible to incorporate into this plan home visits by Public Health nurses before or after the teaching sessions. Information obtained in the home and during the teaching session could be passed on to the patient's physician.

In relation to this proposal, one of the physicians attending the meeting wrote afterwards:

I feel that the initial work-up of the patient is most important. It is not that the average physician is incapable; it is just that he does not have enough time to give the thorough primary instructions and follow-up that are required. This is especially true with regard to poorly motivated patients. Diabetes being the painless disease that it is, fairly loose control is entirely possible with the diabetic knowing very little if anything about his disease. This is especially true now that oral agents are used. I feel that there is an excellent opportunity somewhere along the line to give the new diabetics primary instruction. Perhaps this is the area where Public Health comes in, too.

I think also in the same area it would be possible to follow diabetics over a period of years, either through Public Health, or perhaps something similar to the Tumor Registry, so as to observe them and perhaps motivate them to further educate themselves, and be followed.

Also in this group comes the poorly motivated patient. Perhaps there should be at least one more attempt to get a hold on the diabetic who is not being followed by anyone, including himself.

Mrs. Jean Lassiter, Public Health Nursing Consultant with the State Board of Health, and Miss Julia Watkins of the Department of Public Health Nursing in the School of Public Health, have agreed to work with

Dr. Robie and Dr. Williams on plans for such educational sessions with patients. Methods for gathering more precise information about what the diabetic patient is actually doing in his day-to-day management—methods which have been developed in the studies referred to above—are currently being tested through the cooperation of Public Health nurses in one county and a visiting nurse association in another city.

II. Diabetic Consultation Clinics

There was some doubt about the extent of the need for this type of service—that is, it was felt that most physicians now obtain help through various channels when they need a consultation about their problem patients. Nevertheless, it appeared that it would be worth while to explore the value of diabetic consultation clinics in several communities across the state where physicians were interested in such a trial.

The plan for these trial consultation clinics will probably be somewhat as follows: In a community in which the practicing physicians are interested in the project, specialists in diabetes from one or more of the medical centers will be present on a scheduled day and, as consultants, see a limited number of patients (most or all of whom may be medically indigent) referred by local physicians because of particularly difficult management problems. At the end of the consultation day a conference will be held, open to all physicians in the community, at which especially instructive features of the problems presented by patients seen during the day will be discussed, together with interesting aspects of diabetic management.

Supporting health personnel (nurse, dietitian, or nutritionist) will assist in seeing the referred patients. Special conferences for nurses or dietitians or both may also be arranged.

Within the next one to two months, trial clinics and conferences of the type just described will probably be conducted in several North Carolina communities. Experience with these trials should help materially in evaluating the need for this type of con-

sultative and educational service and its effectiveness.

III. Diabetic clinics for medically indigent patients

In larger communities where outpatient clinics are already providing medical care to medically indigent patients, there may be a need for diabetic clinics for patients with particularly difficult problems. Such diabetic specialty clinics can be developed only where there are enough physicians with a particular interest in diabetes to staff them regularly, and where the local physicians prefer this type of care to treating the same patients as indigents within the setting of their individual practices.

At present a diabetic clinic is already being held twice a month at Charlotte Memorial Hospital. Under consideration is the possibility of strengthening this clinic through the support of additional nursing personnel and through attendance in it periodically of diabetic specialists from the three medical schools.

Such a clinic can serve as the focus for education of house staff in hospitals having a house staff, for the mutual education of participating physicians, and for the education of supporting health personnel in the special problems of people with diabetes.

IV. Statewide diabetes association and local diabetes societies

State and local diabetes organizations would help stimulate interest in and understanding of diabetes among physicians and other professional personnel in the state, among diabetic patients and their families, and among the public at large.

With the support of Dr. William Nicholson at Duke, the coordinator for North Carolina of the American Diabetes Association, it is planned to hold a meeting at the time of the State Medical Society meeting at Southern Pines in May, to consider organizing a state diabetes association. The date and time of the meeting will be announced at the beginning of the Medical Society meeting and can be learned in advance from Dr. Charles Styron of Raleigh or Dr. Luther Kelly, Jr., of

Charlotte. Physicians interested in this possibility are urged to attend.

On the initiative of several diabetic persons in Charlotte, and with the support of Dr. Kelly and other physicians there, a local diabetes society has been started and has held several meetings with as many as 200 persons attending. Local groups such as this offer excellent opportunities for education about diabetes and its management, and encouragement toward better control. In such settings patients can help each other. It is anticipated that the proposed statewide program in diabetes under the Regional Medical Program can help to stimulate the growth and to provide assistance in educational programs for local societies of this type. Such societies would be affiliates of any state diabetes association formed.

Conclusion

Thus, efforts of four general types are under way in an attempt to find out what

may be done feasibly and effectively in the day-to-day health care of persons with diabetes mellitus in North Carolina. Before any particular type of program or effort can be recommended for more expanded and continuing use, it is obviously necessary that such a program be of proven value and that it be accepted and supported by patients, physicians, and other health personnel in the state. At any point, but particularly during this early trial period, the members of the Advisory Committee to this project need and solicit the comments and suggestions of readers of this article.

References

1. Williams, T. F., Martin, D. A., Hogan, M.D., Watkins, J. D., and Ellis, E. V.: The Clinical Picture of Diabetic Control, Studied in Four Settings, *Amer J Pub Health* 57: 441 (March) 1967.
2. Watkins, J. D., Williams, T. F., Martin, D. A., Hogan, M.D., and Anderson, E.: A Study of Diabetic Patients at Home, *Amer J Pub Health* 57: 452 (March) 1967.
3. Etzweiler, D.A.: Who's Teaching the Diabetic? *Diabetes* 16:111 (Feb) 1957.

Data-Gathering Operations of the Regional Medical Program

HARVEY L. SMITH, PH.D.*

It is essential that the North Carolina Regional Medical Program be developed in close relationship to existing health needs and resources in all areas of the state. To accomplish this, a baseline of data must be established. Only when such data are available can the elements of the program be developed with the assurance that they are making the most effective and appropriate use of resources in the improvement of health care. The activities of the Planning Division of the North Carolina Regional Medical Program are geared to this aim.

Planning activities consist largely of data-gathering analysis, and reporting. These are

undertaken with two main goals in mind. One is to provide information to guide the development and outreach of the Regional Program. The other is to monitor as many facets of the present system as can feasibly be undertaken to provide a series of base lines against which the impact of future program components may be gauged.

Implementing these goals has entailed a series of studies of North Carolina's resources and needs. These include surveys of professions and manpower, services and facilities, continuation education, and rates of incidence and prevalence of the categorical diseases. The Planning Division has been structured to carry out these surveys with three main sections (many functions of which clearly overlap). These are professions and manpower, institutions and agencies, and survey research.

From the University of North Carolina School of Medicine, Chapel Hill.

* Director, Planning Division, The Association for the North Carolina Regional Medical Program.

Requests for reprints to the University of North Carolina School of Medicine, Chapel Hill, N. C. 27515.

One of the continuing special responsibilities of the Planning Division will concern evaluation. This will take two forms. One will address the overall evaluation of the program and its impact. It is for this overall evaluation that base line data are currently being assembled. The other will be to provide consultation and technical resources to specific projects with a view to ensuring their effective evaluation. A continuing task will be to relate the evaluation of specific projects with that of the overall program.

The present planning effort is financed for two years, and certain tasks must be completed or under way during that finite period. But in addition to these defined tasks it has an equally important mission—the initiation of a planning process which will continue to inform and guide the future development of the Regional Program. It is anticipated that the Regional Program will include a permanent planning cadre.

Studies are now going on in the several areas of interest. The health occupations and professions are being surveyed; facility and agency resources and services are being asayed; educational programs are being identified and monitored, health statistics are being gathered and analyzed, and the functions of voluntary health associations are being reviewed. Interim reports are being prepared to maximize data availability and, where possible, maps, charts and graphs are used for data presentation to maximize ready communication.

The Planning Division has also been engaged in special studies to meet the emerging needs of the program. As an example, it has explored the dimensions of an affiliation between the Memorial Mission Hospital at Asheville and the Bowman Gray School of Medicine in Winston-Salem. Surveys have been directed at the practicing physicians in Buncombe County and at other staff members of the Asheville hospital. These surveys sought to secure their ideas of the general utility of such an affiliation and their specific recommendations of what such affiliation should strive to provide, especially in the way of continuing education.

Such a study provides something of a model of our survey approach and highlights our specific aims—to secure statements of need and recommendations from those potentially involved, and some statement of their attitudes towards such involvement, so that program development can be based upon the empirics of the local situation. The Regional Program must know what the health professionals of North Carolina need and want. Our surveys aim to provide such information. The study at Asheville was undertaken in the closest collegueship with the Buncombe County Medical Society and the Medical Society of North Carolina. Theirs was the sponsorship for a self-study. Our role was the provision of technical resources. Again, this should be our model for such surveys in the future.

Of special interest for the present report is the survey of physicians throughout North Carolina, which will be carried out by the Medical Society of North Carolina in cooperation with the Regional Program. This survey will aim to delineate physicians' expressed needs which may be met, at least in part, through participation in some aspect of the Regional Program. The replies of physicians across the state will provide essential building blocks for the future development of the Program and its component projects.

A brief resume of the main facets of the forthcoming physician's survey provides some idea of its intent and scope.

The survey will comprise three main foci of interest. First, manpower: numbers, distribution, training background, specialty, age, etc. Second, the resources and needs for diagnosis and treatment of the categorical diseases, including assays of case loads. Third, continuation education: the delineation of existing programs, their goals, areas served, frequency and auspices, numbers, and specialties of teachers and target groups. Recommendations will be sought concerning desirable future program directions.

The participation of the physicians of North Carolina is essential to the usefulness of the survey, and their cooperation is earnestly entreated.

Education and Research in Community Medical Care: University of North Carolina School of Medicine Approach

CARL B. LYLE, JR., M.D.*

For some time the medical schools of the state have become increasingly concerned with the manner in which they might more actively contribute to the resolution of the problems of community medical care. It was this concern in the schools which led to their early participation in the Regional Medical Program.

In the final analysis, success of the Regional Medical Program in North Carolina will hinge upon the extent and effectiveness of the cooperative efforts by the practicing physicians and the university medical centers of the state to improve health services and facilities. Presently, the medical schools, the School of Public Health, and the State Medical Society are working together to strengthen and solidify this working relationship.

Organization and Objectives

In order to more effectively coordinate and expand its interest, activities, and responsibility for improving medical care in the community, the University of North Carolina Medical School established the Division of Education and Research in Community Medical Care in January, 1966. This Division was established as a branch of the Dean's Office, with Dr. W. R. Berryhill, professor of medicine and dean emeritus, as director.

The major objectives of this division are:

1. To establish effective affiliations with a few carefully selected community hospitals as a first step in developing regional educational centers.
2. To develop one or more demonstration centers, especially in rural areas, for experimental or pilot projects in continuing medical care.

3. To provide an opportunity for faculty in the Schools of Medicine and Public Health interested in medical care research and community medical practice to study the disease patterns and medical need of communities.

4. To coordinate and extend the existing educational and research activities of the Medical School within the state mental hospitals and the state prison system.

The creation and the funding of the Regional Medical Program in North Carolina has provided catalytic impetus and some of the material support necessary for meaningful activities in these areas. The following are examples:

I. Development of regional educational medical centers

In an attempt to make a major step toward the development of regional educational centers, the University Medical School has affiliated with the Charlotte Memorial Hospital in Charlotte and the Moses Cone Memorial Hospital in Greensboro. The Charlotte affiliation has been in effect since July of 1966. Through this affiliation third-year residents from the Department of Medicine at the University of North Carolina who are interested in community medical practice may serve one year with the medical service of Charlotte Memorial Hospital as chief resident, to assist in the direction of the activities of the Charlotte Memorial house staff. In addition, fourth-year medical students are provided an opportunity for an elective clerkship on the medical service of the Charlotte Memorial Hospital for a portion of their senior year medical training. Faculty members from the University of North Carolina School of Medicine make frequent visits to Charlotte Memorial for purposes of continuing education through special conferences, and teaching rounds. It is anticipated that a more frequent exchange of faculty members—full and part-time—

From the Department of Medicine and the Division of Education and Research in Community Medical Care, University of North Carolina School of Medicine, Chapel Hill.

Request for reprints to North Carolina Memorial Hospital, Chapel Hill, N. C. 27515.

between the two medical services will be developed in the near future.

In July 1967, a University of North Carolina Medical and Pediatric Teaching Service will be opened at the Moses Cone Memorial Hospital in Greensboro. Two full-time faculty members have been jointly selected by the University and Moses Cone Memorial Hospital and they will direct the University services. Although the Moses Cone Hospital does not presently have a house staff, it is anticipated that an opportunity for fourth-year students to elect clerkships in medicine and pediatrics will be provided in Greensboro. During the forthcoming year the acquisition of a full-time house staff is expected. Frequent two-way exchanges between the staffs of the community hospital and the School of Medicine will produce a mutually beneficial educational environment.

Also at the Moses Cone Hospital, a residency program for physicians interested in continuing comprehensive medical care for the individual and his family will be developed. This three year program, by its flexibility, will reflect the changing patterns of medical care, although the essential content will be training in depth in medicine and pediatrics. Through such affiliation, ties will be developed and strengthened between the practicing physicians in the community and the medical faculty of the University. The elective clerkship for senior medical students who have interests in community medicine will offer a unique opportunity for exposure of these students to community problems prior to the time that their definite plans for future training have been made.

These two affiliations offer an example of the approach which the Division of Education and Research in Community Medical Care and the Departments of Medicine and Pediatrics presently have toward offering a better medium for continuing education for physicians in the community. In addition, several other community hospitals in eastern, central and western parts of the state are at various stages of the phased

planning necessary to develop such affiliations.

II. Development of demonstration centers in rural areas for experimental or pilot projects in continuing medical care

One of the major problems in any rural state is the designing of programs of medical care whereby the most effective delivery of services to a rural population can be made without compromising quality of care. It is anticipated that through the Regional Medical Program, ideas of how best to provide these services can be tested. Regionalization and pooling of medical resources seems the only logical way that services can be delivered to areas of low density population. The development of such programs requires not only the understanding and cooperation of physicians, but also that of community and area leaders.

To this end the categorical approach to heart disease, cancer, and stroke has served in a most interesting and unique way to stimulate the people in various areas to actually think in terms of the anatomy, and indeed the physiology, of medical care. When a group can be encouraged to think through the plans for the medical care problems of any one or all of these categories, they readily realize that the same basic principles may be employed for all segments of medical care. Thus the end result of the categorical attempts has frequently been more comprehensive than categorical, though the basic stimulus was the latter rather than the former.

The Division's endeavors along this line have evolved primarily around planning for a regional program in the eastern Appalachian counties of McDowell, Burke, Caldwell, and Alexander. These four counties have united together to form a Regional Health Council of Eastern Appalachia which is presently applying for Appalachian funds to help fill the gaps in their health services and to better utilize their present facilities and personnel. The purpose of such programs is to stimulate physician leadership in the planning and development of regional programs in less urban areas.

In similar fashion the seven southwestern counties of the state, consisting of Cherokee, Macon, Graham, Clay, Haywood, Jackson and Swain, have joined together to form a health planning council consisting of physicians as well as lay leaders in the area. This seven county endeavor has been incorporated under the title of "The State of Franklin Health Council, Inc." This council is approaching the problems of the area in a systematic fashion to arrive at solutions to their facility, service, and personnel problems.

These rural areas have used as their consultants the Division of Education and Research in Community Medical Care. It is anticipated that the Division will be able to assist other regions of the state in their planning for health services in non-urban as well as urban areas.

III. Involvement of the faculty of the Schools of Medicine and Public Health in community medical care research

Community laboratories are necessary for faculty interested in medical care research and community medical practice to study the disease patterns and the medical needs of a variety of community situations. Such laboratories must be available in order that expertise can develop which will enable the University to offer technical consultation to physicians and community leaders who are involved in planning for the improvement of the quality and availability of medical care for their area. Such community laboratories should evolve in a natural fashion with the development of regional educational centers whether they are urban or rural.

IV. Education and research activities of the medical school within the state mental hospital

Since July of 1963 the Department of Medicine has staffed a teaching medical service within the Dorothea Dix State Hospital. This program has been designed to expose students and house officers to the variety of medical, surgical, neurological, psychiatric, and social problems of the vast psychiatric population of our state. Essentially all students in the fourth year rotate through this medical service where full-time faculty members and house officers from North Carolina Memorial Hospital are in charge. A similar rotational program for surgical house officers has been in effect for some time at Dorothea Dix, Butner, and to a limited degree, Central Prison.

At present the plans are for an expansion of these services in order that clinical investigation can take place in such a setting as to encourage students and house officers to become involved, not only in the care of these patients, but hopefully in the solution of their problems.

Summary

The objectives of the Division of Education and Research in Community Medical Care at the University of North Carolina have been described. Because of the relevance of these activities to the broad aims of the North Carolina Regional Medical Program, a coordination of activities has been accomplished. Presently, the Regional Medical Program is contributing to the support of the planning and development of regional educational medical centers. The degree of success in this undertaking and the interest and support it receives from practicing physicians will significantly influence the nature and rapidity of implementation of other elements of the program.

The love of activity shows itself very early in man. So strong is this principle that a healthy youth cannot be restrained from exercise, even by the fear of punishment. Our love of motion is strong proof of its utility.—William Buchan: Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines, etc., Philadelphia, Richard Folwell, 179. p 71.

Development of a Regional Medical Program in Western North Carolina

RALPH SILER MORGAN, M.D.

When President Lyndon Johnson established the Commission on Heart Disease, Cancer, and Stroke, a new era came into being. In recommending the establishment of a national network of regional centers, local diagnostic and treatment stations, and medical complexes designed to unite the worlds of scientific research, medical education, and medical care, the Commission got to the heart of one of our nation's greatest needs. Hopefully, the proposed network would bring within reach of every physician and every patient, region by region and community by community, the very best in diagnosis and treatment of our major diseases. Since heart disease, cancer, and stroke comprise approximately 70% of the medical problems in America today, the recommendations of the Commission were at once recognized as vital to the total health of our people. Although the original proposals were modified considerably, they had no sooner been made public than some physicians in Western North Carolina saw the potential of such a program in relation to state and area needs.

Organization and Objectives

The Governor's Planning Task Force has divided the state into economic regions. The six western counties—Cherokee, Clay, Swain, Graham, Macon, and Jackson—are included in the Southwestern North Carolina Economic Development Commission. This Commission decided, in the spring of 1966, to give health and medical facilities and services first priority in regional planning. Haywood County, just to the east, appeared to be in a different economic region but, medically speaking, had much in common with the other six. Thus with Haywood added, these seven counties formed the first Medical Regional Council in North Carolina. The area is roughly that part of

North Carolina Appalachia that lies west of Buncombe County.

After two years of thought and planning, this organization was formally established as The State of Franklin Health Council, Inc. Much credit is due Dr. Carl Killian, head of the Department of Psychology, Western Carolina College, Cullowhee, in initiating the movement to establish the Council.

A Health Institute held in Cullowhee on October 3, 1966, was attended by leaders from every community in the area and representatives of state and national economic, social and health affairs. The recommendations of this Institute were followed and culminated in the creation of this new regional health organization on January 17, 1967. Its purposes and objectives are defined in Section I, Article 3, of the By-laws: "The general purpose of the Health Planning Council shall be to study the needs and resources of the region in order to make the fullest use possible of all resources, to add to, as is necessary, and to deliver to all the people the maximum possible in the way of health care."

A definite effort has been made, with some success, to supply special health services in this region, which has in general a low per capita income by comparison with other parts of our nation. Special clinics have rendered noteworthy service. Some of these, such as the cancer clinic, are for the general public; others are primarily for the indigent and medically indigent. Many of the clinics are in great need of expansion, and new ones need to be developed.

Approximately 12 major committees are now at work within the Health Council, and through hard work and the help of authoritative consultation, great progress has been made. To bring these proposals into operation, every possible financial resource will be sought, including the Appalachia Regional

Development Act, the Heart Disease, Cancer, and Stroke Program, and other federal, state, and local resources.

Aims and Recommendations

At the present stage of development, definite plans and recommendations are being made in almost every phase of health work, including home care, mental health, education, and heart disease, stroke and cancer. A few of the specific aims and considerations are as follows:

1. Mental health will be a major point of emphasis. At Western Carolina College there are now clinics for speech therapy, hearing problems, clinical psychology, mental retardation, learning disorders, developmental evaluation, and mental health. Consideration has also been given to the provision of adequate psychiatric facilities. The establishment of a psychiatric unit in some hospital within the area, where both inpatient and outpatient care would be available for both private and service patients, has been considered in detail. If this development is achieved, it will be a great step forward.

2. The Western North Carolina Cardiac Clinic for the diagnosis and treatment of heart disease in indigent patients has served the seven western counties for the past 11 years. This clinic has outgrown its quarters in the C. J. Harris Hospital, and additional space is needed. Serious consideration has been given to extending the effort against heart disease by providing a facility for determining the cardiac-prone patient. This would be a public clinic for apparently well adults, to implement the use of information gained from sources like the Framingham study. This clinic would compile information from blood chemistry determinations, electrocardiograms, history, physical examination, and x-ray studies, and submit it to each patient's personal physician for the detection of heart disease or a tendency toward heart disease. The motto of the facility would be, "To Prevent Where Possible Premature Death."

3. Cardiac monitoring equipment has been installed in two hospitals in the region, and

in the few months of its use, considerable headway has been made in providing intensive care for both cardiac and other acutely ill patients. This step should lead to the establishment of intensive care and cardiac units in other hospitals, with a healthy, progressive exchange of knowledge, experience, and even equipment, should unusual demands be placed on one facility at a given time.

4. Physician involvement in a project of this kind lies at the very foundation of a successful effort. Not only was every physician and dentist in the area informed by every possible means of communication, but personal conversations and interviews have been vital in gaining both confidence in the program and unity of purpose. In addition, requests for help in obtaining a graphic record of medical needs as each physician sees the situation have received almost universal compliance. The questionnaire used for this purpose was supplied through the courtesy of the School of Hospital Administration of the University of North Carolina. The replies will be tabulated, studied, and analyzed later.

The problem of continuing medical education is an old one and remains unsolved for the great majority of American physicians. There have been notable efforts in this direction, including the Mountaintop Medical Assembly in Waynesville. The Western North Carolina Cardiological Society has long sponsored Fireside Conferences on pertinent cardiovascular subjects. A course in electrocardiography for physicians held in March, 1967, was attended by some 22 physicians (about a third of all the physicians in the area) and was considered successful from every point of view. It is felt that efforts such as these might be coordinated and mutually supported, with the possibility of developing an academy of medicine in the region, designed specifically for our physicians and fulfilling their special desires and needs in continued study.

5. The Cancer Clinic, an arm of the State Board of Health, has rendered excellent service, with branches in Bryson City, Murphy, and Sylva. Additional space is needed

in the Sylva clinic, and probably in the other two clinics.

6. A stroke clinic should and could be developed in 1967. Tentatively, the purpose of this clinic would be to identify the stroke-prone patient, if possible, and to take measures to forestall such a catastrophe. A general neurologic clinic should be held as part of the same program. Patients could be evaluated by local physicians under the guidance of consultants in neurology who, it is hoped, would see these patients at regular intervals, finally channeling them to neurologic facilities for definitive treatment.

In this connection, there are two able physical therapists located in the area, and considerable study has been given to making their services available to the whole region. Possibly two central facilities might be established, to work cooperatively with other physical therapy efforts in each medical community. With proper planning and cooperation, this could mean that stroke victims and other patients with neurologic as well as muscular and arthritic difficulties might receive services never before available to them.

7. A school for licensed practical nurses has been authorized in Jackson County and is expected to get under way within two months. Training programs for technicians of many sorts have been discussed and appear to be not only needed but obtainable. Serious consideration has been given to establishing a school of graduate nursing in conjunction with Western Carolina College and two of our larger hospitals.

8. A central clinical laboratory might revolutionize the utilization of laboratory procedures. It could add greatly to the present scope of available services in the larger hospitals, and for hospitals having

no facilities it might be the only practical means of obtaining basic clinical laboratory procedures in the foreseeable future.

9. A regional medical library is envisioned somewhere near the center of the area, where it would be closely associated with a broader educational program. With perhaps 25 or 30 periodicals and a library of films and tapes, it could be the nucleus of a facility for continuous education of physicians, nurses, and paramedical personnel. Standard, up-to-date textbooks in the various medical specialties could be made available on loan for brief periods, and special information might be photostated and sent out within a few hours to physicians on request.

There should be a building somewhere near the geographical or population center of the region to act as a hub for most of the foregoing activities. It probably should be a hospital-oriented facility, with clinic space, administrative offices, classrooms, and a complete physical therapy facility as well as other accommodations. Some, but not necessarily all of these facilities should be under one roof to be most effective.

Conclusions

The spirit of these proposals is clearly regional in emphasis. It would be devastating to the effort if strictly community boundaries or thinking interfered with the overall prospect. If a total health program, sponsored by and designed for all the physicians and paramedical personnel as well as all of the people in the area, can be achieved, it appears definitely within the realm of possibility that an area which now stands in greatest need of adequate medical facilities might leap forward to become eventually one of the better equipped and better served sections of North Carolina.

In some countries laws have been made obliging every man, of whatever rank, to learn some mechanical employment . . . If gentlemen were frequently to amuse and exercise themselves in this way, it might have many good effects. They would at least derive as much honour from a few masterly specimens of their own workmanship as from the character of having ruined most of their companions by gaming or drinking.—William Buchan: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, etc., Philadelphia, Richard Folwell, 1799, p 74.

North Carolina Medical Journal

Owned and published by
The Medical Society of the State of North Carolina,
under the direction of its Editorial Board.

Wingate Memory Johnson, M.D.
Founding Editor (1940-1963)

EDITORIAL BOARD

Robert W. Prichard, M.D., Winston-Salem
EDITOR

John S. Rhodes, M.D., Raleigh
ASSOCIATE EDITOR

Miss Louise MacMillan, Winston-Salem
ASSISTANT EDITOR

Mr. James T. Barnes, Raleigh
BUSINESS MANAGER

W. McN. Nicholson, M.D., Durham
CHAIRMAN

Ernest W. Furgurson, M.D., Plymouth

John C. Reece, M.D., Morganton

Robert A. Ross, M.D., Chapel Hill

Charles W. Styron, M.D., Raleigh

Address manuscripts and communications regarding
editorial matter to the

NORTH CAROLINA MEDICAL JOURNAL

300 South Hawthorne Road, Winston-Salem, N. C. 27103

Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 203 Capital Club Building, Raleigh, N. C. 27602. All advertisements are accepted subject to the approval of a screening committee of the State Journal Advertising Bureau, 510 North Dearborn Street, Chicago, Illinois 60610, and-or by a Committee of the Editorial Board of the North Carolina Medical Journal in respect to strictly local advertising accepted for appearance in the North Carolina Medical Journal.

Instructions to authors appear in the January and July issues.

Annual Subscription, \$5.00

Single copies, \$1.00

Publication office, Progress Printing Co., Inc., Box 175, Fuquay-Varina, North Carolina 27526.

MAY, 1967

THE REGIONAL MEDICAL PROGRAM

Members of the Medical Society of the State of North Carolina have no excuse for ignorance about the Regional Medical Program other than their own indifference, and this issue of the JOURNAL is another document in support of that statement. The program has always seemed far away to some members, and opposed by many others who did not understand its objectives. No matter what one's attitude, the program is a reality, the Medical Society is a partner in it with the state's three medical schools, and indi-

vidual physicians must keep abreast of it.

The deans of the three medical schools chose to make no statements in this special issue of the JOURNAL because they want to put into relief the Medical Society's partnership in the program. This relief is to emphasize that the Regional Medical Program intends to reflect the needs of practicing physicians as they express those needs through their Medical Society representatives. The role of the medical schools is to do what they can to help meet those needs. The medical schools have not been appointed to second guess the practitioners, and will avoid such a function. The onus is clearly on the practicing physician outside the medical schools to help form the program as far as goals are concerned.

In the months and years ahead, these early times of the program will no doubt be regarded as the critical period, when the shape of things to come became apparent. Thus far the Medical Society has played a creative role and our state's program is out ahead of many others because of this attitude. The only sensible course is to continue to act intelligently and constructively.

* * *

CONTRIBUTE NOW—BREED LATER

There is great talk currently about the establishment of human sperm banks in which outstanding men's chromosomes will be stored in order that a race of supermen can be started. The source of nominations is not entirely clear. This particular idea will likely meet a great deal of resistance, for even geneticists of the more manic sort will admit that they do not have all the answers which should be at hand before such a program is seriously considered. It would be nice, however, if a family of the sort which currently makes up most of our society could be slightly improved. Such a family would still have kids failing arithmetic, or unable to spell, but with less atherosclerosis, hypertension, pernicious anemia, and a few other things. And the kids would still be blood relatives of both parents.

A modest proposal to accomplish such an end goes something like this. The male progenitor deposits semen in a bank, which

will no doubt be a branch of the Federal Reserve. If, by age 60, he has no detectable disease to which heredity contributes more than 10%, and does not derive more than 90% of his income from federal welfare funds (we are talking about a period a few years off), he would be eligible to be a father. His unimproved sons by his ordinary marriage would then use his sperm for the insemination of their wives, after which they too would wait until age 60 to see if they are eligible. The benefits would be greater with each successive generation. The proper balance of male and female children will by then be possible, of course. Who to call grandpa may be confusing, but the word is not used with precision even now.

Despite the attractiveness of the scheme, its central feature, the preservation of children as blood relatives of the parents, might no longer be of much significance to the people of this future generation. Children will likely be cared for, cradle to grave, by the federal government, and the point of who their biologic father is might be considered of interest only to antiquarians and geneticists.

* * *

JOHN HUNTER AND 18th CENTURY MEDICINE

In the 1967 book issue of the JAMA (April 3), Frank Slaughter, the Florida surgeon turned phenomenally successful novelist, comments on his writing career. In the course of his article he mentions some medical novels which he feels merited greater success than they achieved, among them "Lancet," by Garet Rogers (Bantam Books, New York, 1958). This little book has been recommended for some years to students in the sophomore course in medical history at Bowman Gray, since it provides a reasonably accurate, though fictional biography of John Hunter, and since it is a novel, can fill in the background of 18th century London in a fashion not always easily achieved in a conventional biography. Rogers writes extremely well, and in John Hunter he has a central character who gives the artist wide latitude while staying within the bounds of the facts,

There are those who have little good to say about 18th century medicine, dismissing it as a time of systematists whose systems now seem ridiculous. In recent years Lester King, a pathologist who is now an associate editor of the JAMA, has set himself the task of interpreting this century as much more vital and valuable than has been widely admitted in the past. Certainly John Hunter is one of the great figures of 18th medicine and, more generally, of experimental biology. One gets an insight into what made him tick from Roger's novel in a pleasant way that can be heartily recommended, and in the process an appreciation of Dr. King's favorite century.

* * *

LEONARDO DA VINCI AND MODERN ANATOMY

The recent rediscovery of a number of anatomic drawings by da Vinci, long mis-catalogued in a Spanish library, brings before us additional reason to marvel at the genius of this great Florentine, possessor of unrivalled talent in so many fields. It recalls the stir that came abroad in the medical and artistic world when attention was called, years ago, to the existence of a great number of Leonardo's anatomic drawings in the Royal Library at Windsor, and the recognition of his insight which followed the publication of a complete set of reproductions in 1911-1916. The drawings of that collection, as do the drawings of the Spanish group, reveal a profound knowledge of anatomy, far in advance of anything known at the time. Such matters as the curvature of the spine, the anatomy of the uterus, the action and counteraction of muscle groups are depicted in a fashion which would do credit to a modern anatomy text, and better than some. But for constructive reasons, it might be well to turn away from the bedazzlement engendered by viewing the drawings and marvelling at their insights, and consider what, if any, effect Leonardo had on the progress of anatomic knowledge.

Leonardo's drawings were based on 30 dissections of males and females of various ages, according to the memoirs of the Car-

dinal of Aragon. Greater numbers of dissections are cited by some authors. They were prepared as illustrations for an anatomy text by his friend Marco Antonio della Torre, a physician of Verona who died at 33. Annotated in his mirror writing, Leonardo's manuscripts were known only to a few persons, and most of them were not physicians. While it is possible that some of the drawings were seen by Vesalius, there has never been any significant opinion that Vesalius owed a major debt to Leonardo. One is forced to conclude that Leonardo's great effort, undertaken with what must have been major support by ecclesiastical authorities, had no significant effect on the anatomic knowledge of his time. The reasons are not clear; in any event, communication was lacking, even though the means of communication existed at the time. Had Leonardo's work been known and accepted, it is likely that both

anatomy and physiology would have gained many years in the advancement of knowledge, for Leonardo's interest in physiology was equal to, and inseparable from, his interest in anatomy. Perhaps he did not want to engage in the controversy which later descended on Vesalius, for in challenging Galen one challenged the medical and clerical establishment, no mean feat at any time, and especially in those years. Perhaps he was distracted by the multitude of other projects on which he was constantly working. Whatever the cause, it was centuries before his work commanded the respect to which it was entitled, centuries which saw the contributions of less gifted people bring modern anatomy into being. Over and over again one appreciates the Biblical injunction to keep one's light out from under the bushel—would that the Cardinal of Aragon had preached this to Leonardo.

Surrounding houses too closely with planting, or thick woods, . . . tends to render the air unwholesome. Wood not only obstructs the free current of air, but sends forth great quantities of moist exhalations, which render it constantly damp.—William Buchan: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, etc., Philadelphia, Richard Folwell, 1799, p 70.

TUCKER HOSPITAL, Inc.

212 West Franklin Street

RICHMOND, VIRGINIA

A private hospital for diagnosis and treatment of psychiatric and neurological disorders. Hospital and out-patient services.

JAMES ASA SHIELD, M.D.

WEIR M. TUCKER, M.D.

GEORGE S. FULTZ, JR., M.D.

EDWARD W. GAMBLE, III, M.D.

CATHERINE T. RAY, M.D.

GERALD W. ATKINSON, M.D.

Correspondence

RADIO CONFERENCE TAPES

To the Editor:

We feel that we have a very extensive and excellent supply of continuing education materials in the tape recordings of our two-way radio conferences. A few physicians and groups borrow these from time to time, but we would like to call their availability to the attention of the physicians of the state.

We will be pleased to lend these tapes to individual physicians or to medical staffs or medical societies at no charge except return postage. For most of those in which slides were used we will send along a set of 2 x 2 slides.

William P. Richardson, M.D.
Assistant Dean for Continuation
Education
The University of North Carolina
School of Medicine
Chapel Hill

A list of titles appears on page 214 of this issue. Ed.

UTILIZATION OF THE PHARMACIST AS A HEALTH PROFESSIONAL

To the Editor:

The problem of overtraining and underutilization has been troubling pharmacy and particularly colleges of pharmacy for a good many years. We, as well as other colleges, are again taking a very hard look at this problem, especially in the light of the severe shortage of trained health-oriented personnel.

What and where is the shortage of health personnel? Can we, with minor or major changes in our curriculum, equip our pharmacist to fill these shortages—and be paid for his services?

Consider this proposal for the future. Pharmacies operated under the supervision of registered pharmacists dispensing medication to the community on Rx. To increase the efficiency, he supervises the actual work of 6-10 pharmacist aides (two year men).

He has the full responsibility for the operation—maintains all patient records—bills government and private agencies—provides M.D.'s with information on drug products—compound special products as needed. A busy but efficient operation.

Another pharmacist (possibly a six-year man) trained, in addition to what he now receives, in pathology, anatomy, some diagnostic skills, plus clinical experience in a hospital, serves as an assistant to the physician, a sort of junior G.P. treating minor illnesses or referring patients to the appropriate specialist.

Both of these proposals should make health services more readily available to all, relieve the physician of the minor cases, and, hopefully, reduce the cost of health care to the public.

Alvin Felmeister, Ph.D.
Associate Professor, Pharmaceutics
College of Pharmaceutical Sciences
Columbia University

Annual Report of Duke Poison Control Center

The annual report (November 1, 1965 through October 31, 1966) of the Duke Poison Control Center has been released by Dr. Jay M. Arena, Director. Dr. Shirley K. Osterhout is assistant director of the Center.

During the report period, the Center managed 792 cases, 15 of which are known to have resulted in death. In 54 cases, the ingestion was known to be intentional. The report lists the following broad classifications of poisoning agents with the number of cases attributed to each agent:

Agent	Number of Cases
Internal Medications	338
Household, Farm, Commercial Products	243
Insecticides	71
Plants	32
External Medications	37
Cosmetics	42
Pesticides	24
Insect Bites	5
Total	792 Cases

Aspirin again headed the list of internal medications, accounting for 101 cases and one fatality. Sixty-four per cent of all ingestions were in children under three years of age. One hundred and twenty-seven cases required hospital admission; thirty-two percent of these were admitted at Duke.

The Duke Poison Control Center has managed a total of 4,986 cases since it opened in November 1955.

NORTH CAROLINA MEDICAL RETIREMENT SAVINGS PLAN

The Retirement Savings Plan Committee is pleased to report that the first annual report of the North Carolina Medical Retirement Savings Plan has been sent to each of the participants in the Plan. For the general record the Committee wishes to publish the Statement of Condition each year in this section of the Journal. A more complete report is made for the compilation of Committee reports for members of the House of Delegates. Others may obtain additional information by request.

Retirement Savings Plan Committee
Jesse Caldwell, M.D., Chairman

WACHOVIA BANK AND TRUST COMPANY MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA RETIREMENT SAVINGS PLAN AND TRUST

STATEMENT OF CONDITION

December 31, 1966

ASSETS

Cash		\$ 19,244.84	
Accrued dividends and interest receivable		695.16	\$ 19,940.00
Investments:			
	Cost	Market Valuation	
Common Stocks	\$ 74,248.43	\$ 72,462.75	
Temporary Bonds			
Retirement Savings Plan and Trust	89,000.00	89,000.00	
Accounts Pending Treasury Dept. Approval	58,000.00	58,000.00	\$219,462.75
	<u>\$221,248.43</u>		<u>\$239,402.75</u>

LIABILITIES AND NET WORTH

Liabilities		
Due Wachovia Bank and Trust Company fees for December	\$ 70.54	
Due Minnesota Mutual Life Insurance Company contribution for December	299.60	\$ 370.14
Net Worth		
Member's Accounts—Stock Account		\$172,177.96
Member's Accounts—Pending Account		66,854.65
		<u>\$239,402.75</u>

N. C. STATE BOARD OF HEALTH TUBERCULOSIS CONTROL SECTION

COMMENTARY ON TUBERCULOSIS CONTROL IN NORTH CAROLINA

ROY V. BERRY, M.D., M.P.H.

Tuberculosis control in North Carolina represents the sum of the activities engaged in by constituent local health jurisdictions, the State Sanatorium System, practicing physicians, tuberculosis associations, and other agencies and individuals, together with the State Board of Health, which attempts to co-ordinate the activities of all those involved in controlling and trying to reduce the toll of sufferers.

In 1966 it all added up to 1,266 new active cases being reported. Figures for the preceding four years are:

1962	1963	1964	1965
1344	1386	1282	1276

The new active case rate for the state as a whole last year was 26.0 per 100,000 population (14.0 per 100,000 whites and 62.5 per 100,000 non-whites). Case rates for the three geographic areas of the state are as follows:

Coastal Plain	Piedmont	Mountains
39.7	19.5	16.4

For each of the last five years, of the reported pulmonary cases including primary disease, which together account for almost 90% of the total of all forms of new active cases reported each year, 70% have been either moderately or far advanced, and 40% have been far advanced, at the time of diagnosis.

Thirty-two cases of pulmonary infection due to atypical acid-fast bacilli were reported in 1966, or 2.5% of the total number of reported new active cases of disease due to *Mycobacterium tuberculosis*.

The state-maintained mass miniature chest x-ray program has been cut back due to the high cost and diminishing yields in terms of new active cases found in surveys directed at the general population at large, including industries. Two mobile chest x-ray clinics

are maintained for work in areas of relatively high incidence or areas lacking adequate chest x-ray resources.

Many health departments in the state annually screen quite large numbers of school personnel, usually by tuberculin skin test and chest x-ray examination of the positive reactors. This seems a well worth-while procedure in terms of possibly preventing tuberculous infection among school children, and in fact is required by the State Department of Public Instruction as part of a teacher's annual health examination. Many health departments also continue to screen annually large numbers of food-handlers, although in several areas the yields of new active cases from this activity is very low—perhaps low enough to wonder whether it is still necessary, especially if it may be pre-empting other more selective control activities. There is no state regulation regarding this practice, it being a matter for local health jurisdictions to decide in the light of local circumstances. Many health departments also perform tuberculin skin tests and chest x-ray examinations for patients referred by practising physicians, a very important part of overall control activities.

Since there may be anywhere from one half to perhaps two million or so North Carolinians already infected with tubercle bacilli, proportionately more in the upper age groups, and since the greater majority of our new active adult cases each year result from endogenous breakdown, the task of eliminating tuberculosis as a health hazard is clearly impossible in any short period of time. Particular attention would seem to be called for in trying to prevent as many children as possible from becoming infected by improving epidemiologic control measures, hopefully with some acceleration in the rate of decline of incidence over the next few decades.

The U. S. Public Health Service special tuberculosis project for North Carolina is presently providing financial assistance for improved tuberculosis control activities at the rate of \$350,000 yearly. This sum is divided among some 23 N. C. counties covering 38% of the total population of the state.

From the Tuberculosis Section, Division of Epidemiology, North Carolina State Board of Health, Raleigh.

Request for reprints to Box 2091, Raleigh, N. C. 27602.

Further assistance is expected to be provided this year for an additional 6 to 12 counties, which would bring the percentage of the total population covered by such improved local services to between 50% and 60%. This project is the direct outcome of recommendations made in 1963 by the Surgeon-General's Task Force on the future of tuberculosis control in the United States. Funds are paid directly to qualifying local health departments having significant tuberculosis control problems within their jurisdictions, to expand existing programs in an effort to further reduce the incidence of the disease, which at present appears to be either localized or merely sporadic in North Carolina communities.

The best chance for further reduction in the incidence would seem to lie in improved follow-up of contacts of active cases; bringing to examination the household associates of young children found to have significant sensitivity to 5 tuberculin units of PPD-S; and periodic examination of high risk groups, particularly if they happen to be males, such as prison and other institutional inmates, welfare recipients, nursing/boarding home patients, and groups with large tuberculin reactions, particularly if they also show pulmonary scarring by chest x-ray, alcoholics, diabetics, postgastrectomy patients, and those on prolonged steroid therapy.

The use of prophylactic isoniazid in certain groups also offers some prospect of further reducing the incidence, particularly in contacts of new active sputum-positive cases and especially child contacts under 5 years of age; those of any age where a recent tuberculin conversion can be substantiated; and perhaps in those found to have large tuberculin reactions, especially if the chest film shows evidence of apparently healed lesions of uncertain etiology.

The North Carolina Heart Association reports that it has long been known that exercise is "generally good for the health." But, after studying people in different occupations, scientists have concluded that exercise may be "particularly good for the heart."

Bulletin Board

Coming Meetings

Medical Society of the State of North Carolina, 113th Annual Session—Pinehurst, May 20-24.

University of North Carolina School of Medicine, Symposium on Medicine and Religion—Chapel Hill, June 11-13.

Tri-State Medical Association, Annual Meeting—Nags Head, June 12-14.

Mountain Top Medical Assembly, 14th Annual Meeting—Waynesville, June 15-17.

Seaboard Medical Association, Annual Meeting—The Carolinian Hotel, Nags Head, June 16-18.

Duke Postgraduate Course—Atlantis Lodge, Atlantic Beach, July 10-15.

National Society for Crippled Children and Adults—Century Plaza Hotel, Los Angeles, November 16-19.

NEW MEMBERS OF THE STATE SOCIETY

Charles DeWitt Watts, 510 Simmons St., Durham.

R. E. Frazier, 442 Jackson Street, Roanoke Rapids.

Robert Warren McDowell, 507 E. Martin St., Raleigh.

Alvin Paul Kitchin, Jr., Sea Level.

John J. White, Jr., 327 Lawndale Ave., Winston-Salem.

Donald Robert Chimene, 1001 N. Elm St., Greensboro.

Stephen J. Naso, 6014 Lakeview Dr., Charlotte.

Winsel Oneal Black, 101½ N. Main St., Salisbury.

Roger Allen James, 1 Evergreen Lane, Asheville.

Irwin Arthur Brody, Rt. 1, Hillshorough.

Daniel Thomas Gianturco, 4833 Stafford Dr., Durham.

Jack Knight Goodrich, 2940 Welcome Dr., Durham.

Seuk Ky Kim, 1200 Leon St., Durham.

Robert Smithwick Pool, Forsyth Memorial Hospital, Winston-Salem.

William Thaddeus McLean, Jr., 725 Austin Lane, Winston-Salem.

James Willard Singer, 1209 Magnolia St., Greensboro.

Charles Judson Sawyer, Academy St., Ahoskie.

William M. Clarke, Town Center, Southern Pines.

H. David Bruton, Town Center, Southern Pines.

George Alexander Weimer, 2013 Pinecrest, Greenville.

Robert Lee West, 650 Fairlane Rd., Greenville.

Harvey E. Grode, Wilson Clinic, Wilson.

M. A. Pittman, Jr., Wilson Clinic, Wilson.

John Edney Wise, Rt. 3, Box 113 B, Hickory.

Philip Tindall, 4039 King Charles St., Durham.

Donald Widmann, 1504 Cumberland Rd., Chapel Hill.

Hillel Jonathan Gitelman, N. C. Memorial Hospital, Chapel Hill.

Edward Leo Hogan, N. C. Memorial Hospital, Chapel Hill.

James Howard Scatliff, N. C. Memorial Hospital, Chapel Hill.

Robert William Hart, III, 125 21st Ave. N. E. Hickory.

Henry Neil Kirkman, Jr., UNC School of Medicine, Chapel Hill.

Wesley Fletcher Phillips, P. O. Box 313, Walkertown.
Preston Almond Walker, 5207 Hawksberry Lane, Raleigh.

Eli Zonana, Box 531, Siler City.

George Thomas Rosser, 808 N. Dekalb St., Shelby.

Thomas Wood, III, 624 Quaker Lane, High Point.

Joseph Franklin Borg, Lynn Rd., Box 306, Tryon.

Legrand Thurman Scott, Jr., 2004 Brookbank Rd., Rockingham.

Roy Venden Berry, Box 2091, Raleigh.

Carl Ashton Broadus, 309 Lord Berkley Rd., Raleigh.

Joel Richard Temple, 308 N. Bynum St., Wilson.

I. C. Neilson, Carolina General Clinic, Wilson.

Charles Perry Blomeley, Corner Blanton St. Walker Rd., Columbus.

William Augustus Story, 201 Grover St., Shelby.

Philip Elmore Christopher, 420 N. Center, Hickory.

NEWS NOTES FROM THE BOWMAN GRAY SCHOOL OF MEDICINE OF WAKE FOREST COLLEGE

The Bowman Gray School of Medicine has received a \$974,000 grant from the Health Research Facilities Branch of the U. S. Public Health Service for use in the construction of new facilities for research and research training.

It was the second federal grant to be awarded in 1967 as matching support for the medical center's \$28-million expansion program. A \$2,105,553 grant, awarded through the Health Professions Educational Assistance Act, was received in January.

Funds from these two grants, along with matching funds from private sources, will finance the first phase of the building program. Units included in this phase are a 122,000-square-foot addition to the medical school, a 400-seat auditorium, and a new power plant.

The most recent grant will be applied to the construction of research facilities within the medical school addition, which will be connected to the present medical school building. The new structure will house three medical school departments—physiology, biochemistry and biomedical engineering—and part of one other, pathology. The bulk of the new space, however, will be devoted to multidisciplinary laboratories for teaching medical and graduate students in the basic medical sciences.

The total medical center building program, which will include a 14-story hospital facility, is designed to

bring about expansion and improvement of the center's three major functions—teaching, patient care and research.

A \$984,000 grant, awarded recently to the Bowman Gray School of Medicine by the National Institutes of Health, will support the development of a sizeable computer system for use in the patient care programs of the medical school and North Carolina Baptist Hospital.

The grant will enable the school to acquire a large digital computer and to conduct a comprehensive three-year evaluation of the role of computer techniques in clinical medicine.

Dr. Robert E. Robinson III, principal investigator of the Department of Medicine project, said the new computer will be installed in September and will be connected to a smaller computer which is already in operation.

The objectives of the project are closely related to the government's proposed program on health services research in that it explores ways that physicians' time can be utilized more efficiently and more effectively. The system planned here is designed to make complete, accurate medical data instantly available to the physician.

The system has potential application over a broad clinical area, including diagnosis of disease and treatment of patients. Dr. Robinson has devised an intensive evaluation program which initially will be focused on a 38-bed ward in the hospital. The program is expected to be expanded eventually to cover the entire hospital.

* * *

Dr. Howard H. Bradshaw, professor and chairman of the Department of Surgery, has been appointed to a 28-man national committee on surgical education in medical schools. The appointment was announced by the Board of Regents of the American College of Surgeons. The primary purpose of the committee is to evaluate the place of surgery in the medical school curricula and to study the problems related to surgical education in medical schools.

* * *

Dr. Joseph E. Whitley, associate professor of radiology, was recently appointed consultant with the Special Projects Branch, Section on Epilepsy, Collaborative and Field Research of the National Institute of Neurological Diseases and Blindness.

Plans to develop the Bowman Gray School of Medicine and North Carolina Baptist Hospital as a major center for cancer research, training and patient care



WESTERN CAROLINA'S GREAT SMOKIES at their BEST . . .

A wonderful place to spend a night, a month or the summer . . . RELAX and forget the outside world . . . ENJOY a vacation in a most wonderful and comfortable RESORT . . . RUSTIC but MODERN . . . RESTFUL but with many kinds of fun-giving facilities . . . For the LONER or FAMILY . . . Leave the hustle and bustle of the outside world behind and RIDE, SWIM, GOLF, LOAF, SUNBATHE, FISH and REST . . .

NANTAHALA VILLAGE

Drawer M-4

Phone 9225
BRYSON CITY, NORTH CAROLINA

were advanced recently through a two-day Oncology Center Planning Workshop in Winston-Salem.

Dr. I Meshan, professor and chairman of the Department of Radiology, directed the workshop in which 35 visiting consultants, representing every science related to cancer, participated. Also participating were 42 members of the Bowman Gray faculty.

Plans were initiated seven months ago for the development of an oncology center at the medical center. The project is supported by two federal grants totaling more than \$588,000.

* * *

Members of the graduating class at the Bowman Gray School of Medicine will serve internships at 31 hospitals in 20 states. The appointments, made through the National Intern Matching Program, will become effective July 1. Seventy per cent of the class received first-choice appointments.

* * *

Dr. Frank C. Greiss Jr., assistant professor of obstetrics and gynecology, participated in a meeting of the Society for Gynecologic Investigation March 2 in New Orleans, La. He presented a paper on "Effects of Parasympathetic Nerve Stimulation and Acetylcholine on the Uterine Vascular Beds of Pregnant and Non-Pregnant Ewes."

* * *

Dr. I. Meschan, professor and chairman of the Department of Radiology, was visiting professor March 7 at Vanderbilt University Medical Center where he pre-

sented lectures on "Some Interesting Facets of Cerebrovascular Anatomy and Roentgen Signs of Abnormality" and "A Quantitative Technique for Measuring Individual Renal Function without the Necessity for Catheterization."

* * *

Richard L. Witcofski, instructor in medical physics, presented a paper on "Technetium-99m and the Rectilinear Scanner," March 31 at a Nuclear Medicine Symposium at the University of South Florida, Tampa, Fla.

NEWS NOTES FROM THE DUKE UNIVERSITY MEDICAL CENTER

A former All-American basketball and baseball star, now a surgeon at Duke University Medical Center, is one of 25 newly appointed Markle Scholars in Academic Medicine.

An athletic looking 34, Dr. Paul A. Ebert turned down several financially attractive offers from professional basketball and baseball clubs to become a physician.

He joined the Duke staff almost a year ago as an assistant professor after completing a residency in general and thoracic surgery at Johns Hopkins Hospital.

Since his arrival here, Dr. Ebert has been the surgical member of the pioneering medical scientist program which will train a select group of candidates for simultaneous M.D. and Ph.D. degrees over a period of six years.

As a Markle Scholar, Dr. Ebert joins some 455 other scholars in 89 medical schools who during the past 20 years have shared appropriations of more than \$13.5 million. The honor brings to Duke a \$30,000 grant which will be paid at the rate of \$6,000 a year for five years for research or administration by the scholar.

Dr. Ebert is a native of Ohio and a graduate of the Ohio State University, where he also received his M.D. degree in 1958. His training in surgery was obtained at Johns Hopkins where he was chief resident in surgery.

In college, Dr. Ebert was outstanding academically and also won numerous citations for his athletic prowess and other extra-curricular activities on campus.

* * *

Dr. Ernest W. Page, chairman of the department of obstetrics and gynecology at the University of California School of Medicine in San Francisco, was the third annual E. C. Hamblen Visiting Professor at Duke Medical Center, April 11-14.

Dr. Page delivered lectures on reproductive endocrinology and similar topics while at Duke.

The E. C. Hamblen Professorship was established in memory of the late Dr. Hamblen who was a professor of endocrinology and an associate professor of obstetrics and gynecology at Duke.

Dr. Hamblen, who died Nov. 24, 1963, founded the division of endocrinology at Duke in 1937 and was its

Compliments of

Wachtel's, Inc.



Surgical Supplies



15 Victoria Road

P. O. Box 1716 Telephone AL 3-7616

ASHEVILLE, North Carolina

chief until July 1, 1955, at which time he began devoting his full time to teaching and research.

* * *

The far-reaching implications of genetic manipulation were discussed recently at a seminar at Duke University on medical science and moral responsibility.

Airing the matter before an audience of lay persons, two Duke researchers suggested the quality of future human beings could be controlled.

The technical ability to achieve fertilization in the test tube is a near reality, said Dr. Arthur C. Christakos, an assistant professor of obstetrics and gynecology.

And because much has been learned lately about transferring genes from one cell to another, Dr. Walter R. Guild, a professor of biophysics, believes that genetic treatment of disease might eventually be possible by supplying functional genes from a donor.

But before this can be done, Dr. Guild said scientists must be sure they are not doing more damage to the rest of the million of so genes in the body by adding bad ones.

Drs. Christakos and Guild were two of a group of speakers who took a close look at the legal, ethical, and moral problems generated in medicine in recent years as science has crossed new frontiers.

* * *

A division of biomedical engineering will be established at Duke University to educate specialists who will link the fields of medicine and engineering at the applied and basic levels.

Announcement of the new division was made by Dr. J. L. Meriam, dean of the School of Engineering, and Dr. William G. Anlyan, dean of the Duke Medical Center.

Students in the program will be prepared for a wide range of 20th century undertakings such as cardiovascular research, development of artificial organs for the human body, and conditioning for wide-scale space explorations.

Problems confronted in the advancement of man-in-the-sea projects, leading to the exploitation of vast mineral and food resources, will be encountered in the studies. Both the engineering and physiological aspects are part of the biomedical engineering.

The Duke program will be supported by the Schools of Engineering and Medicine. Their efforts will be directed toward training people for a new profession which requires more knowledge about medicine than is possessed by the average engineer and more knowledge in engineering than is possessed by the average doctor.

The division is to begin its function as part of the School of Engineering at the opening of the 1967-68 academic year. Dr. Theo Pilkington, who holds the joint appointment of associate professor of biomedical engineering and electrical engineering, will head the division.

NEWS NOTES FROM THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE

Thomas L. Henley, a student at the U. N. C. School of Medicine, has been awarded a fellowship to study this summer in a special Institute on Human Sexuality and Reproduction in Medical Education at Winston-Salem.

He is one of 10 medical students selected in the U. S.

The Institute will take a look at what is often regarded as a neglected subject in medical education—that of human sexual behavior.

Most of those attending the Institute will be medical school faculty members from across the United States whose aim it will be to come up with some new sex-oriented medical teaching methods.

* * *

The National Institute of Neurological Diseases and Blindness has awarded approximately \$60,000 to U. N. C. for a three-year research project on the regulation of respiration by the central nervous system.

Dr. Richard L. Glasser, physiologist at the U. N. C. School of Medicine, will direct the study.

The project will involve comprehensive research on the organization of nerve cell networks in various parts of the brain which are responsible for originating and controlling breathing.

* * *

Six graduates of the operating room technician program were recognized during special ceremonies at N. C. Memorial Hospital here in late March.

Successfully completing a 20-week course were Miss Rosetta A. Breeze of Hillsborough; James E. Milton of Salisbury; Miss Delaine Perry of Carrboro; Miss Nancy A. Riley of Timberlake; Mrs. Pearl V. Satterfield of Hillsborough; and Miss Linda C. Ward of Morrisville.

* * *

Memorial services were conducted on February 27 at N. C. Memorial Hospital for Dr. Harry S. McGaughey, Jr., 44, president-elect of the Society for Gynecologic Investigation, and chairman of the Department of Obstetrics and Gynecology, at the U. N. C. Medical School. He died February 25 after a heart attack.

A consultant to the National Institute of Health, and a faculty member of the University of Virginia Medical School 11 years prior to coming to Chapel Hill in January, 1966, Dr. McGaughey won prizes of national consequence for his research and publication in his specialty. At the University of Virginia he had a joint appointment in physiology and in obstetrics and gynecology.

He was to have assumed the position of President-Elect of the Society for Gynecologic Investigation at the organization's annual convention in March in New Orleans. Dr. McGaughey was secretary-treasurer of the Association of Professors of Gynecology and Obstetrics. He was a native of Kenosha, Wisconsin, a graduate of the University of Wisconsin, and received the M.D. degree from the University of Wisconsin Medical School in 1946.

Two out of three of the students at U. N. C. in Chapel Hill who apply for medical school are accepted and become medical students. This record places U. N. C. among the top 25 schools in the U. S. supplying the largest number of entering first-year medical students.

The national acceptance rate among applicants for medical school in 1964-1965 was 47.2 per cent and the percentage of the applicants who actually become medical students was 44.7 per cent.

U. N. C.'s acceptance rate was 64.7 per cent and the percentage of U. N. C. applicants who became medical students was 62.2 per cent.

The figures are based on a study by the American Association of Medical Colleges.

* * *

Dr. E. K. Greenwald, a research associate in the Department of Physical Medicine at Ohio State University for the past year, has been given a joint appointment as an instructor in biomedical engineering and biomathematics at the U. N. C. School of Medicine and N. C. State University in Raleigh.

He is a native of Dayton, Ky., graduated in engineering physics from Ohio State University's College of Engineering, and received a doctorate in biophysics from Ohio State.

He has taught in the College of Engineering and the College of Medicine at Ohio State, and has been a research assistant there in the Department of Physics.

* * *

Techniques used to return patients with severely damaged hands and arms to their jobs were discussed and demonstrated at U. N. C.'s Hand Rehabilitation Center in early April.

About 50 physicians and occupational and physical therapists from throughout the U. S. registered for the first "Course in Rehabilitation of the Hand."

In addition to the staff of the "Hand House," instruction was offered by Dr. Donald Eyler, an orthopedic surgeon in Nashville, Tenn., Dr. Charles Long, II, acting director of the Department of Physical Medicine and Rehabilitation at Highland View Hospital in Cleveland, Ohio, and Mrs. Ann Craig, anatomy instructor at the University of Tennessee Medical Unit in Memphis, Tennessee.

* * *

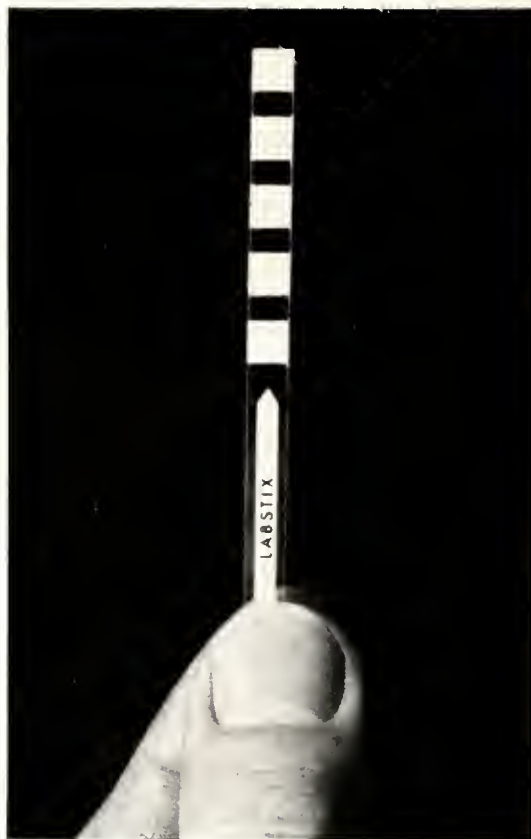
Miss Myrl L. Ebert, chief librarian for the Division of Health Affairs Library at U. N. C., is one of two women appointed to a new committee of the U. S. Public Health Service's National Library of Medicine.

Nine medical librarians, biomedical researchers and scientist-editors of biomedical journals have been named to the new Committee on Selection of Literature for MEDLARS (Medical Literature Analysis and Retrieval System).

The committee will advise the National Library of Medicine on the choice of published material to be filed in its computerized reference system.

* * *

U. N. C. Chancellor J. Carlyle Sitterson has been appointed to the National Advisory Allergy and Infec-



Take five...

LABSTIX® provides 5 important urinary findings*—on a single reagent strip! That's *more* information than you can get from any other single reagent strip. You know the results in just 30 seconds—while the patient is still in your office—and readings are reliable and reproducible. LABSTIX is easy to handle, too. Never goes limp, even when wet, because it's made with clear, firm plastic. And results with LABSTIX are easy to read—color contrast between the test areas and the transparent plastic is clearly defined. An unexpected "positive" from testing with LABSTIX may help in detecting hidden pathology before marked symptoms are manifest.

*Blood; ketones; glucose; protein, and pH.

AMES COMPANY
Division Miles Laboratories, Inc.
Elkhart, Indiana 46514



Ames

Note: AMERICAN HOSPITAL FORMULARY SERVICE
CATEGORY NUMBER 36:88 40167



...Plus one

You can extend your testing scope by including ICTOTEST® Reagent Tablets, the 30-second determination for bilirubinuria—which can be an early sign of obstruction of the common bile duct, infectious hepatitis, or other liver disease. This test is also useful for detecting liver damage from carbon tetrachloride and other halogenated hydrocarbons used as industrial and household solvents. Positive findings with the urine-testing team of LABSTIX and ICTOTEST can represent significant guides to patient management in many clinical situations. "Negatives" may help rule out suspected abnormalities over a broad clinical range and are important for the patient's record.

AMES COMPANY

Division Miles Laboratories, Inc.
Elkhart, Indiana 46514



Ames

Note: AMERICAN HOSPITAL FORMULARY SERVICE
CATEGORY NUMBER 36:88 40167

tious Diseases Council. As a council member, Dr. Sitterson will advise the Surgeon General on grant activities of the National Institute of Allergy and Infectious Diseases, one of the eight National Institutes of Health.

* * *

A unique program which attacks the problem of mental illness on a wide scale and gives psychology students the chance to lend a hand in treating mental patients has ended a successful first year at John Umstead State Hospital in Butner.

Umstead and the psychology department at U. N. C. are partners in the new effort.

The goal of the program is to provide a broad training opportunity for the students which also meets some aspects of the patients' needs.

* * *

Dr. John B. Graham, pathologist and geneticist at the U. N. C. School of Medicine, has accepted an invitation to serve as chairman of the Genetics Training Committee of the National Institute of General Medicine Sciences, National Institutes of Health.

The appointment is for a four-year term beginning next July 1.

Members of the committee are advisors to NIH and to the U. S. Surgeon General about applications for training grants. Their decisions help determine areas in which research training should be initiated or expanded.

* * *

Dr. William B. Castle, award-winning medical scientist whose work led to a treatment for pernicious anemia, presented the second annual Merrimon Lecture at the U. N. C. School of Medicine March 22. His subject was "Pernicious Anemia: A Continuing Story."

Dr. Castle was in residence at the medical school all week and conducted clinics and conferences with medical students.

* * *

The classroom where students go merely to stock their memory cells with information is rapidly becoming obsolete.

A U. N. C. psychiatrist says it is being replaced by a classroom in which a "double-purpose curriculum" is used to stimulate students to develop new mental abilities while they acquire information.

Dr. William G. Hollister, director of the Community Psychiatry Section of the Department of Psychiatry at the U. N. C. School of Medicine, believes the double-purpose curriculum is capable of "not only imparting content but also of potentiating the specific intellectual and emotional capacities of the mind."

His opinions were expressed in a talk in Washington, D. C. during the annual meeting in late March of the American Orthopsychiatric Association, a group interested in emotional and mental development.

* * *

Dr. John I. Boswell, Jr., a Virginia native, has been appointed director of the Division of Child Psychiatry at the U. N. C. School of Medicine here.

He is former director of the Adolescent Treatment Unit at John Umstead Hospital in Butner and joined

the U. N. C. Department of Psychiatry as a clinical instructor in child psychiatry four years ago.

He succeeds Dr. Rex W. Speers, who resigned to develop a training program in child psychoanalysis at the University of Pittsburgh School of Medicine.

* * *

An affiliation between the University of North Carolina School of Medicine and Charlotte Memorial Hospital has been extended so that fourth-year medical students now have an opportunity for training in Charlotte.

A six-year tour of duty is being offered to seniors in the medical school here as one of several options during their training in the Department of Medicine.

Dr. Louis G. Welt, chairman of the Department of Medicine at the U. N. C. medical school said in commenting on experience with the extended program in Charlotte so far that the students are having "an exciting and valuable clinical experience in general."

* * *

Dr. Charles H. Burnett has been named a special assistant at U. N. C. to promote and coordinate programs between the University and the National Center for Environmental Health Sciences in the Research Triangle Park.

He will continue as a professor of medicine at the School of Medicine.

As a special assistant, Dr. Burnett will report to Dr. C. Arden Miller, vice chancellor for health sciences.

NORTH CAROLINA HEART ASSOCIATION

The North Carolina Heart Association has awarded \$72,115 to support 36 research projects by Tar Heel scientists in the field of cardiovascular disease this year, according to an announcement by Dr. A. Robert Cordell, president of the N. C. Heart Association.

This research will be carried on at four medical centers within the State. These institutions are: Veterans Administration Hospital, Durham; U. N. C. School of Medicine, Chapel Hill; Bowman Gray School of Medicine, Winston-Salem; and Duke University Medical Center, Durham.

This is only a portion of the money that the North Carolina Heart Association will grant in the coming year, Dr. Cordell went on to say. The grants cover a wide range of basic and clinical research and a number of them will go to support continuing investigations in progress for the past several years.

"While we don't have the answer to cardiovascular diseases yet, research in this field has brought about a number of advances that are saving lives daily and adding years to the lives of heart disease victims. The future is getting brighter all the time," Dr. Cordell added.

In the next 5-10 years, medical leaders estimate, the nation will need 70,000 more doctors, 130,000 more professional nurses, 125,000 more practical nurses, 38,000 more medical technologists, 30,000 more dietitians and 18,000 more medical social workers—to cite just a few of the 700-odd career possibilities in the health field.

APPALACHIA HEALTH ADVISORY COMMITTEE

Dr. Jacob Koomen, State Health Director and Chairman of the Appalachia Health Advisory Committee, outlined the components of the Appalachia program in Raleigh recently for a Joint Committee for the Health Care of the Chronically Ill and Aging. These include health education, personal preventive services, community wide environmental health services, and home health care, he said. Dr. Koomen foresees increasing state involvement in the functioning of such federal programs as the Appalachia program, Area Wide Planning, and Heart, Cancer and Stroke.

The Joint Committee is comprised of state agencies and professional health associations interested in chronic illness and aging. The recent program was devoted primarily to the involvement of the private practice of medicine in the various programs induced by enacted federal legislation.

Dr. Charles Boettner, Director, Appalachia Commission, Washington, D. C., told the meeting that the Appalachia Regional Commission was formed in March of 1965 with federal and state representation. The purpose of the program is to attack problems common to a region and to provide services where needed with priority being given to those places with greatest potential development of health services.

This program, said Dr. Boettner, is meant to supplement and assist the private practice of medicine and is not designed to offer free health care services.

Dr. Frank W. Jones of Newton, N. C., President of the State Medical Society, spoke of the recent involvement of physicians from a four-county Appalachia area of North Carolina in the planning of a demonstration project for the counties of Alexander, Burke, Caldwell and McDowell, along with representatives of the State Medical Society. The Society, he said, is continuing its participation in the project in the interest of more effective rendering of quality health care in the manner in which the people of the area are accustomed.

The four-county area Appalachia project will, if approved by the Appalachia Commission, provide funds for facilities, programs, and medical services to improve the health care of the people in that area primarily as a demonstration project.

In addition to Dr. Koomen, two physicians in private practice from North Carolina are members of the Health Advisory Committee of the Appalachia Regional Commission. They are Dr. Amos N. Johnson of Garland and Dr. Thomas D. Slagle of Sylva.

Twenty-nine counties in Western North Carolina are included in the Appalachia area.

Dr. Robert A. Ross, of Chapel Hill, President-elect of the State Medical Society, commented that involvement of physicians in planning is necessary in order to insure high quality medicine for the future.

The State Medical Society has a Committee on Appalachia whose purpose is to study how the Appalachia Act might effect the private practice of medicine in North Carolina and to instigate participation in such developing programs.

NEWS NOTES

Dr. Abe Lawrence Feuer of Gastonia is serving as otolaryngologist on the S. S. HOPE in Columbia, South America for the two-month period April 15-June 15.

* * *

Dr. Jack W. Wilkerson of Greenville represented North Carolina at the meeting of chairmen of state medical societies' committees on Medicine and Religion held in Chicago recently.

The purpose of the meeting was to report activities that had taken place in the various states, and to exchange ideas that might be helpful to other state chairmen.

AMERICAN MEDICAL ASSOCIATION

Twelve U. S. physicians, including a father-son team, comprise the latest group to go to South Viet Nam under the AMA Volunteer Physicians for Viet Nam program. They will be in South Viet Nam until June 1, working at civilian hospitals in rural areas.

The father and son are Paul R. Meyer, M.D., Port Arthur, Texas, a pediatrician, and Paul R. Meyer, Jr., M.D., Tulane University Medical School, New Orleans, La., an orthopedic surgeon. The younger Dr. Meyer will, upon his return in June, enter the private practice of surgery in Chicago and join the faculty of the Northwestern University School of Medicine.

The other physicians include two from North Carolina. They are Dr. Charles C. Dudley, Jr., of Elkin, a general practitioner; and Dr. A. Frank Thompson, Jr., of Concord, a general surgeon.

A serious shortage of native physicians exists in South Viet Nam. Of the approximately 1,000 Vietnamese physicians, nearly 900 are in the armed forces, leaving only about 100 to care for the health needs of 16 million people.

* * *

"Guides to the Evaluation of Permanent Impairment—Mental Illness," tenth in a series of guides to the Evaluation of Permanent Impairment—has been published by the American Medical Association.

This guide, like the others in the series, has been designed primarily for use by physicians. It is, however, of interest to all concerned with the medical administrative, or judicial aspects of programs for the disabled.

The previously published guides in the series deal with the extremities and back; the visual system; the cardiovascular system; ear, nose, throat, and related structures; the central nervous system; the digestive system; the peripheral spinal nerves; the respiratory system; and the endocrine system.

A limited number of copies of the Guide to the Evaluation of Permanent Impairment—Mental Illness may be obtained, without charge, upon written request to the Committee on Rating of Mental and Physical Impairment, 535 North Dearborn Street, Chicago, Illinois 60610.

NATIONAL INSTITUTES OF HEALTH

The cooperation of physicians is requested in a continuing study of calcium and phosphorus metabolism being conducted by the Metabolism Branch of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

Of interest for this study are patients with documented hypophosphatemia such as in primary hyperparathyroidism, Fanconi's syndrome and vitamin D resistant rickets.

Patients for this study should be clinically stable, continent of urine and feces, and be willing to participate in metabolic balance studies during a 30-day admission to the Clinical Center.

Physicians interested in having their patients considered for this study may write: James M. Phang, M.D., Clinical Center, Room 3B-40, National Institutes of Health, Bethesda, Maryland 20014.

NATIONAL LEAGUE FOR NURSING, INC.

The program of the National League for Nursing Convention in New York will open May 8, with a keynote address by John S. Millis, Ph.D., president of Western Reserve University and chairman of the Citizens Commission on Graduate Medical Education.

The week-long convention will feature many other notable figures in health and education as the program develops various facets of the convention theme, "Nursing in the Health Revolution."

The convention runs from May 8 to 12 with major sessions at the New York Hilton Hotel. The National Student Nurses' Association Convention, May 4-7, immediately precedes the League meeting.

The Animal Care Panel Adopts A New Name

President Harold M. Kaplan of the Animal Care Panel has announced that the name of the Panel has been officially changed to American Association for Laboratory Animal Science (AALAS). Because the purposes and the activities of the organization as it operates today have outgrown the name originally adopted 18 years ago when the ACP was organized, the new name has been established, effective January 1, 1967.

The American Association for Laboratory Animal Science thus continues to be an association of individuals and institutions professionally concerned with the production, care and study of laboratory animals. The Association shall continue to serve as a clearing house for the collection and the exchange of information on all phases of laboratory animal science. This is accomplished through the annual meetings, the official bimonthly publication *Laboratory Animal Care*, the quarterly *Bulletin*, and other occasional publications and reprints.

The American Association affirms its obligations and rights pursuant to all existing agreements entered into in behalf of the Animal Care Panel. The change in name does not affect any of the existing policies of programs of the Animal Care Panel.

The Month in Washington

The American Medical Association favors utilizing Medicaid instead of expanding Medicare.

Dr. Charles Hudson, AMA president, outlined the Association's position at a House Ways & Means Committee hearing on the Administration's bill "Social Security Amendments of 1967" (H. R. 5710). He was accompanied by Dr. Milford O. Rouse, AMA president-elect.

"Available tax funds should be used to give maximum health care to those who need help," Dr. Hudson said. "Expenditure of public funds on those who do not need help limits the resources available to those who do need it. . . .

"We believe that a properly administered Title 19 (Medicaid) with realistic criteria of eligibility designed for economically disadvantaged persons, plus the encouragement and improvement of voluntary health insurance and prepayment plans for the solvent, provide the best approach to health care financing."

Dr. Hudson said AMA representatives would be glad to meet with the committee and other interested parties to hammer out a workable approach to solving the many complex problems in the Medicare program, particularly as concerns its Plan B.

"Unfortunately, Part B did not receive an amount of public or congressional debate warranted by the nature and scope of the proposal," he said. "This committee is now confronted with many problems inherent in the vast undertaking of the federal government in becoming directly involved in the total health care of almost 20 million persons.

"We believe it is possible for the Congress, the medical profession, and others interested in the subject to develop a new mechanism for delivering medical care to people over 65 that would be more consistent with existing private sector mechanisms. . . ."

Dr. Hudson said that carriers, physicians, patients, and the government all are dissatisfied for various reasons with Part B.

He said one possible solution might be to substitute for the Part B program a subsidy to all eligible persons for the purchase of private insurance.

Highlights of AMA's testimony included:

Section 125, to include the disabled.

The adoption of Section 125 . . . could change the direction of Medicare from a program for older persons to one aimed at various select categories . . . We believe Title 19 should be utilized for that purpose.

We urge the Committee to reject this provision.

Section 127, including podiatry.

While recognizing the usefulness of podiatry services, we are impelled to note that if the amendment is adopted, the podiatrist could assume responsibility for the care of some of the more difficult problems in medicine. We believe this to be unsound.

Section 130, creation of Part C of Title 18.

This section would provide a new Part C to cover payment for hospital services rendered to hospital outpatients; and for diagnostic specialty services to both outpatients and inpatients of hospitals.

The AMA opposes Part C *in toto*. . . .

Section 131, physician certification.

The AMA endorses Section 131 which would remove the requirement of a physician's certification for inpatient hospital care for each Medicare patient admitted to a general hospital. We urge the Committee to consider this amendment favorably and remove an unnecessary impediment to the operation of Part A.

We further urge that the requirement for re-certification be similarly deleted, since this need should be satisfied as a result of the work of utilization review committees.

Until re-certification is deleted, we suggest that the first certification date be the 20th day of hospitalization, as permitted in the existing law.

Section 220, income maximum under Title 19.

The AMA supports the concept of limiting eligibility for Title 19 benefits to persons who genuinely need financial assistance in meeting their health care needs.

Section 226, free choice under Title 19.

Although free choice is guaranteed for Title 18 recipients, a similar privilege was not extended to Title 19 beneficiaries. We believe this was an oversight, and we heartily support this perfecting amendment to Title 19.

Additional amendments proposed by the AMA.

First, the AMA recommends that Title 18 be amended to permit payment of charges for professional services on the basis of a physician's itemized statement of charges rather than a receipted bill.

Second, we recommend that Title 18 be amended to remove the requirement for three days of hospitalization before qualifying for extended care benefits.

In addition, we offer a recommendation relating to psychiatric care under Title 18.

Regarding Title 19, we offer six amendments.

First, that the program permit payment to the patient for services rendered to him by a physician on the basis of the physician's itemized statement of charges.

Second, that the program clearly provide for the payment of physician fees on the basis of his usual and customary charges, using the same approach as that applied under Title 18.

Third, that Title 19 encourage the use of insurance carriers in the implementation of state programs.

Fourth, that in the implementation of Title 19 programs, there be no requirement for certification or re-certification.

Fifth, that Title 19 permit all state plans to vary the eligibility standards within a state to recognize the very real differences in the cost of living in a rural area, a small town, a city or a metropolitan area.

Our sixth recommendation relates to the fact that Title 19 benefits differ for mentally ill patients depending on whether they are above or below age 65. We believe there should be no distinction in the services available to mentally ill patients.

Physician coverage under Social Security.

We believe that physicians, having been brought under Social Security coverage,

should be accorded the same privilege and opportunity for reaching a fully insured status as was accorded other professional groups when they were included in the program.

Accordingly, we urge this Committee to consider the adoption for physicians of an "alternative insured status" similar to that permitted by the amendments of 1954 and 1956 which brought into the program many new groups of people and professional self-employed persons, including lawyers.

New Diabetes Film Offered to Medical Groups

In *Finding the Hidden Diabetic*, a new 39-minute film aimed at professional audiences, four outstanding diabetologists discuss the causes of today's swift increase in diabetes prevalence, and then explore some challenging ideas on how to attack the problem.

The film was produced as an educational service of The Upjohn Company, and is available on request and public health meetings, and to other professional for showing in medical schools, hospitals, at medical groups.

Why it is so important to detect diabetes in its early stages, how this can be done by selective screening techniques, which "high risk" population groups should be tested, how to lessen or possibly prevent the common vascular complications of diabetes, and what screening and diagnostic criteria should be observed, are among the subjects explored in the film.

Also offered by Upjohn on request, either with the film or separately, are copies of a 14-page reference brochure on *Finding the Hidden Diabetic* illustrated with scenes from the film and presenting the highlights of the discussion.

Requests for the film and brochure should be addressed to: Diabetes Detection Program, Room 914, 342 Madison Avenue, New York, N. Y. 10017.

Neo-Mull-Soy—New Hypoallergenic Infant Formula

There is a problem with nature's nearly most perfect food . . . Some people are allergic to it. It is reported that between one and two percent of the general population is allergic to cow's milk. While a milk allergy condition may not present great problem to an adult, it is of critical importance in the case of an infant.

Neo-Mull-Soy, a new hypoallergenic infant formula by the Borden Company, is designed to solve the problem. The product is a soy isolate formula that is described as having a protein level "nearer to breast milk than any other soy preparation."

Neo-Mull-Soy is available at leading drug stores as a concentrated liquid in 13-ounce cans. It is prepared for use simply by the addition of water. A ready-to-feed version is available only to hospitals.

Duplicate Tapes of Two-Way Radio Conferences University of North Carolina School of Medicine

General Medicine

- The Unconscious Patient, Thomas R. Scott
- Diagnosis & Management of Rheumatoid Arthritis, Donald D. Weir
- Thyroid and the Skin, J. Graham Smith (Duke)
- Lung Abscess, Thomas B. Barnett
- Gout: What it is and what it isn't, Donald D. Weir
- Hyperbaric Oxygenation in Medicine, Saltzman, Whalen, Osterhout (Duke)
- Peritoneal Dialysis, William B. Blythe

Cardiology

- Antihypertensive Drugs, James W. Woods
- Evaluation of patients with surgically correctible heart disease, Harned, Craig
- Chest pain and Angina Pectoris, Daniel Young, Ellis Rolett
- Antihypertensive Drugs, James W. Woods
- Early Management of Acute Myocardial Infarction, James Woods, E. Craig
- Mechanism of Action of Digitalis, E. Rolett, Young, Baggett
- Heart Murmurs and Children, H. Harned, Castle
- Antihypertensive Drugs, James Woods
- Anticoagulation in Coronary Heart Disease, James W. Woods
- Management of Cardiac Arrhythmias, Sawyer, Little (Bowman Gray)
- Antihypertensives, W. Carter, B. Marks

Endocrinology and metabolism

- Use of insulin in the treatment of diabetes, C. Fordham, T. Williams, VanWyk
- Surgery in the diabetic patient, T. F. Williams, W. Wells
- Dehydration, L. Welt
- Edema II, L. Welt
- Significance of Hyponatremia, L. Welt
- Acid Base Balance I and II, L. Welt
- Oral Hypoglycemic Agents, T. F. Williams
- Inborn Errors of Metabolism, H. Chamberlin, G. Summer, W. Robie

Communicable Diseases

- The New Vaccines, Floyd Denny and John Arnold
- Diagnosis and Treatment of Viral Disease, J. Lyons, J. Miller
- The Streptococcus and Rheumatic Fever, Floyd Denny
- Tuberculosis: Drug Therapy, Thomas Barnett
- Meningitis: Common Causes & Management, T. W. Farmer
- The Newer Penicillins, G. Stewart, F. Denny, J. Fischer

Hematology

- Use and abuse of hematinics, Jeffress G. Palmer
- Bleeding and Clotting Disorders, Harold Roberts
- Blood Transfusion, Robert Langdell
- The Anemic Patient, J. G. Palmer

Gastroenterology

- Management of coma & ascites in Cirrhosis of the Liver, F. Iher (JH)
- Pancreatic Disease: Medical & Surgical Management Sessions & Thomas
- Gallbladder Disease: Facts and Fallacies, O. L. Sapp
- Peptic Ulcer, Etiological Concepts & Medical Management, Sessions & Thomas
- Peptic Ulcer, Current Surgical Practices, Sessions & Thomas

Pediatrics

- The New Vaccines, F. Denny, J. Arnold

- Allergy in the Infant and Child, Susan Dees (Duke)
- The Mentally Retarded Child, H. Chamberlin
- Leukemia in Children, Howard Pearson (Univ. of Fla.)
- The Streptococcus & Rheumatic Fever, F. W. Denny
- Heart Murmurs and Children, Herbert Harned, Robert Castle
- Common Skin Conditions in Pediatric Patients, C. Wheeler, D. Abele
- The Troubled Teenager, J. Boswell, M. Liptzin
- Inborn Errors of Metabolism, H. Chamberlin, G. Summer, W. Robie

Urology

- Renal Calculi, Paul Bunce, W. Boyce
- Management of Urinary Tract Infections, P. Bunce, J. Fischer

Obstetrics and Gynecology

- Oral Contraceptives, Ben Peckham (Univ. of Wisconsin)
- Evaluation of Infertility, L. M. Talbert
- Management of the Menopause, R. A. Rouse, D. Easterling

Radiology

- Radiostopes in Diagnosis and Therapy, Francis D. Pepper

Surgery

- Surgery in the Diabetic Patient, T. F. Williams, W. Wells
- The Surgery of Lumps and Bumps, J. F. Newsome
- The Management of Hand Injuries, Erle Peacock
- Early Management of the Severely Burned Patient, E. Peacock
- Peptic Ulcer, Current Surgical Practices, Sessions & Thomas
- Breast Cancer, George Crile (Cleveland, Ohio)

Malignancy

- The Surgery of Lumps and Bumps, James F. Newsome
- The Solitary Pulmonary Nodule, R. Peters, Reed Rice
- Leukemia in Children, Howard A. Pearson (Univ. of Fla.)
- Breast Cancer, George Crile (Cleveland, Ohio)

Orthopedics

- Low Back Pain, Frank C. Wilson
- Common Orthopaedic Problems in Children, R. B. Raney, H. Brashear

Ear, Eye, Nose and Throat

- Emergency Eye Care, Thomas G. Kiffney

Psychiatry

- The Troubled Teenager

Dermatology

- Thyroid and the Skin, J. Graham Smith (Duke)
- Common Skin Conditions in Pediatric Patients, C. Wheeler, D. Abele
- Clinical Aspects of Genetics, N. Herndon, H. Goodman (B.G.)

Pulmonary Disease

- The Solitary Pulmonary Nodule, R. Peters, Reed Rice
- Lung Abscess, Thomas Barnett

Other

- Diagnosis & Treatment Conference, George Koury
- The Medical Examiner System, Hubert Patterson
- Diagnosis & Treatment Conference: Medical & Surgical Problems, J. Sessions
- Diagnosis and Treatment Conference, D. Young
- Oral Manifestations of Systemic Disease, P. Webster
- Office Microbiology, Janet J. Fischer
- Viral Diseases in Children, William P. Glezen
- The Newer Vaccines, Ronald H. Levine, Wallace A. Clyde

Practical Pulmonary Function Evaluation, William B. Wood, Irvin S. Perry
 Renal Radiography, James H. Scatliff, Everette Schultz, Otis Fisher, and John Simmons
 The Present Approach to the Study of Renal Function, Christopher C. Fordham, William Blythe
 The Present Status of Kidney Transplantation, Roscoe Robinson, Delford Stickel, Duke University Medical Center
 Some Aspects of Leukemia, James A. Bryan, Jeffress G. Palmer
 Acne: Scourge of Youth, Clayton E. Wheeler, Donald C. Abele
 Current Therapy of Emphysema, Herbert O. Sieker, Duke University Medical Center
 The Management of Chronic Liver Disease, Harold J. Fallon
 The Acute Abdomen—Surgical or Medical Problem, Hubert Patterson, Oscar Sapp, Charles Bream
 Eclampsia, Richard Burt, Frank Lock, Bowman Gray School of Medicine
 The Septic Abortion, Harry S. McGaughey, Robert Brame
 Common Benign and Malignant Tumors of the Skin, Joseph J. Russo, Anthony Nardacci, Albany Medical College, Albany, N. Y.
 Special Neurological Tests—When and Why to Order Them, Edward Hogan, Gordon Dugger
 Medical Management of Renal Stones, William H. Boyce, William Montgomery, Bowman Gray School of Medicine
 Dietotherapy in Gastrointestinal Disease, John T. Sessions, Oscar Sapp
 Auscultation of the Heart, Ernest Craigie
 Fevers Not Requiring Antibiotic Therapy, Joseph S. Pagano
 The Influx of Worldwide Disease, Martin Keller, Glen Gresham, Ohio State University College of Medicine
 Congestive Heart Failure, Ellis Rolett, Daniel Young
 Venereal Diseases and the Practicing Physician, William L. Fleming, Ronald H. Levine
 Diagnosis and Treatment of Venereal Diseases, William L. Fleming, George W. Crane, Jr., Durham, N. C.

Johnson & Johnson Offers Free Handbook on Care of Incontinent Patients

A comprehensive, 48-page handbook on the care of incontinent patients at home has been prepared by Johnson & Johnson and is now available to druggists, doctors, nurses, and institutions for free distribution to consumers. The booklet is expected to serve also as a valuable instructional aid in hospitals and nursing homes.

Written by Maxine Hartman, R.N., "Home Care and the Incontinent Patient" includes a checklist of necessities for equipping the patient's room, a discussion of the physical and emotional needs of the patient, instructions for his proper personal care and helpful hints on retraining incontinent patients.

Johnson & Johnson recently announced a new line of ten Home Care Products specifically selected to meet the needs of patients convalescing at home, and available to consumers through pharmacies, for the first time. The products are established hospital items most widely used to treat convalescents, and have now been

packaged in small quantities to suit consumer needs at home.

The company plans to offer a variety of educational materials in conjunction with the new Home Care line, and this booklet is the first of these aids.

Copies of "Home Care and the Incontinent Patient" may be obtained in quantity by druggists, doctors, nurses, and institutions by writing to Johnson & Johnson, New Brunswick, N. J. 08903. Consumers may obtain the booklets only from these professional sources, not from Johnson & Johnson directly.

Chair for the Severely Handicapped

As a part of the War on Poverty, the Macon Program for Progress is developing a new product known as the Living Center Unit, which is designed to fill a need for the totally dependent, bed-ridden, severely handicapped child or adult.

Designed in cooperation with the Western Carolina Center in Morganton and thoroughly home-tested, the unit somewhat resembles a high chair on wheels.

This basic unit will sell for much less than most custom models having fewer desirable features. For low income families (less than \$3,000 yearly) the unit will sell at near cost—which should be about \$50. The regular price will be about \$75.

In addition to the low cost, the chair will offer the following advantages:

—It will grow with the child (up to 175 pounds in weight and 70 inches in height). A special oversized model will be offered.

—A large work table with a retainer rim will lock in any position.

—"Tie-in" slots will provide support and maximum security for persons who cannot sit unassisted.

—A special "slide down stop" will keep the child or adult from sliding out.

—Improved sanitation features.

—Knock down construction (the entire unit can be disassembled by loosening eight bolts).

Those interested in obtaining further details of the Living Center Unit are invited to write Dick Vance, Macon Program for Progress, Franklin, North Carolina. Refer I. I. Project No. 20.

Duke Graduate Receives SK&F Award

Judith L. McKay, a junior at Tufts University School of Medicine, Boston, Massachusetts, has been awarded a \$1,503 fellowship which will enable her to broaden her clinical training by assisting at a mission hospital in Nsukka, Nigeria.

Miss McKay is the daughter of Dr. and Mrs. John A. McKay of Fayetteville. She is one of 35 American medical students who have received Smith Kline & French Laboratories Foreign Fellowships from the Association of American Medical Colleges. The fellowships are supported by a grant from the Philadelphia prescription drug firm.

Prenatal Care Is Essential For Mother's and Baby's Health

Pregnant women are less likely to have complicated or premature deliveries if they have adequate prenatal care. But unfortunately many parents-in-the-making—especially those who cannot afford a private doctor's fee—still do not seek the help that is available.

In "Nine Months to Get Ready," a new Public Affairs Pamphlet, Ruth Carson stresses the importance of prenatal care, both physical and emotional, and tells where to find it. The pamphlet and a related film of the same title were prepared in cooperation with the North Carolina State Board of Health. The pamphlet is available for 25 cents from the Public Affairs Committee, 381 Park Avenue South, New York, N. Y. 10016; information about the film is also available from the Committee.

"Nine Months to Get Ready" is No. 376 in the Public Affairs Pamphlet series, now in its thirtieth year. The series includes many other distinguished titles covering health and science, family relations, social and economic problems, and intergroup relations. All pamphlets sell for 25 cents each; a list is available upon request.

New Buffered Surgical Scrub From S. M. Edison Chemical

A new, high-efficiency surgical scrub, buffered to maintain maximum antibacterial action even at 50 to 1 dilutions, has been announced by the S. M. Edison Chemical Company, New York. The company also manufactures and distributes Dermassage. Introduction of Derma Surgical follows intensive national testing in hospital operating rooms, nurseries, obstetrical and surgical wards. Derma Surgical is a clear aquamarine liquid that combines the germicidal power of hexachlorophene with the soothing action of Dermassage lotion. It is available in four-ounce, eight-ounce, and 1-gallon sizes.

A free sample of Derma Surgical may be obtained by writing S. M. Edison Chemical Co., 300 Park Ave., New York, N. Y.

Classified Advertisements

Pediatric practice available for follow up pediatrician mountain town-county fifty thousand population also drawing other areas. Three hospital town opening suitable two pediatricians with office available and take over arrangements. Marked urgency on this replacement. Write "Placement Service 14-25", P. O. Box 790, Raleigh, N. C. TF

Doctor's office available for lease in Durham, N. C. Attractive waiting room, secretary's office, doctor's office, two examining rooms, small lab in a recently built building. Write Box 790, Raleigh, N. C. or phone Durham 489-2786. AMJ

WANTED—GP's to work as staff physicians. Contact Superintendent, Dorothea Dix Hospital, Raleigh, North Carolina. AMJ

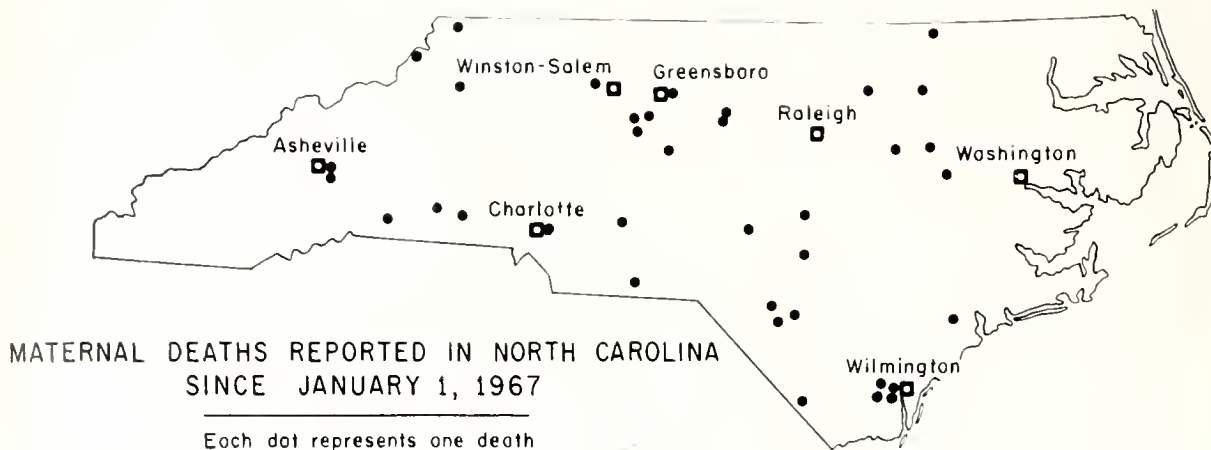
"Medical Director wanted for Health Department in beautiful Western Piedmont County. Modern Department, top salary and fringe benefits." Reply Box 790, Raleigh, N. C. MJ

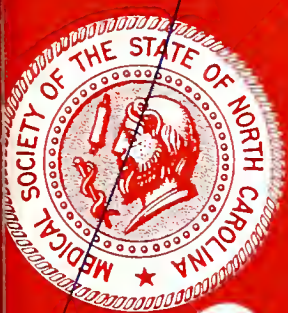
Personality Factors in Traffic Accidents

We need to know more about the personality factors of drinking or sober drivers, that may play a decisive role in traffic accidents.

This research need was cited by a psychiatrist discussing the problem of driving, drinking, and death at the University of Michigan's Sesquicentennial symposium on the prevention of highway injury.

Pointing out considerable research dealing with the accident driver, Robert A. Moore, M.D., chief of the psychiatry department at the Swedish-American Hospital, Rockford, Ill., said they depict the accident driver as being "impulsive, immature and antisocial," "showing poor control of hostility, decreased tolerance to tension, dependency, egocentricity, and lack of reflectivity." Taxi drivers were found to show "low tolerance to frustration, revolt against authority, antisocial attitudes." Accident drivers were "intolerant to frustration, risk takers, and inattentive to their environment."





MEDICAL JOURNAL

PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

IN THIS ISSUE:

President's Address

FRANK W. JONES, M.D.

RECEIVED

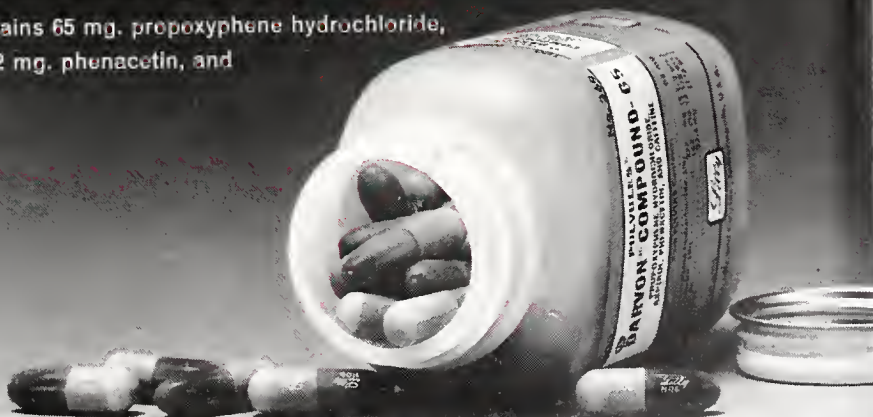
JUN 1967

DIVISION OF
HEALTH AFFAIRS LIBRARY

Something special

Darvon[®] Compound-65

Each Pulvule[®] contains 65 mg. propoxyphene hydrochloride,
227 mg. aspirin, 162 mg. phenacetin, and
32.4 mg. caffeine.

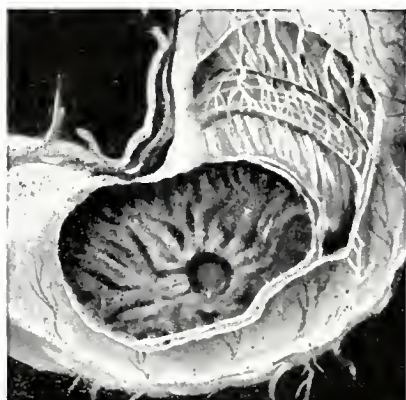


Additional information available
to the medical profession upon request.
Eli Lilly and Company
Indianapolis, Indiana 46206



700510

In peptic ulcer... antacid therapy with a new benefit



CONTAINS A BALANCED
COMBINATION
OF THE MOST WIDELY
USED ANTACIDS—
FOR RAPID
NEUTRALIZATION.
PLUS SIMETHICONE—
TO CONTROL
THE FACTOR WHICH
ANTACIDS ALONE
CANNOT INFLUENCE.

Mylanta[®]

- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

Stuart

NORTH CAROLINA MEDICAL JOURNAL

OWNED AND PUBLISHED BY

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 28

JUNE, 1967

NUMBER 6

President's Farewell Address:

The Society in Competition: Planning for Tomorrow

FRANK W. JONES, M.D.

The word "society" as used here will mean the medical society or association as an entity. As such, the Society is constantly engaged in dealing with the ever-changing patterns of the whole of society. The Society is the composite of its adherents and elements, and must, if it consummates the desires of its membership, be constantly seeking for means to mold its plans and policies to meet the needs of the day.

This time-honored institution has been called all too long a farewell address—a valedictory. Farewell? *No!* This address is a salute to a challenge. It is in part a report of a stewardship; it is an acknowledgment that time is fleeting, and that it inexorably grinds onward to some ultimate destiny; it is a distillate of 25 months of observation of the American medical scene from the Atlantic to the Pacific; it is, if you like, a rounding off, but not the completion, of a third of a century as a licensed doctor of medicine.

There was a time when the president of a state medical society dealt with the affairs of medicine within the geographic confines of his state. Today he is a rover. Today he is at home in New York, Washington, Chicago, the West Coast, or points in between. He is more usually a visitor in his own home town.

This is as it should be. Ideas, concepts, problems, plans, projections generated in Maine, Florida, Iowa, Alaska, and Hawaii

become the concerns of every one of our states. We are no longer limited by the barriers of time and travel. We are limited only by our ability to receive and distill the presentations which we are exposed to.

Dreams and Problems

In America we have a lively faith in the promise that man is perfectible. We conclude that the diffusion of knowledge must of necessity be advantageous and that the consequences of ignorance are fatal; we consider that society as a body is in a state of improvement, that humanity is a changing pattern on the screen of life in which nothing is or ever should be permanent; and we freely admit that what appears to us at this moment in time to be good may be supplanted by something better tomorrow.

Alexis de Tocqueville said somewhat similar things about America, but in different words and in a different language, over a century ago. I do not find today that our mainstream of thought differs significantly. We exhort ourselves to reach for a quality of excellence. Creative and constructive ideas arising out of informed minds has always characterized an intelligent society.

Man is a dreamer, and what he dreams can be wrought into reality, and as a result of this implementation, problems are created. Problem areas will always exist, and we cannot adopt the foolish attitude of shutting our eyes and hoping they will go away. Nor can we by blowing fitful gusts of words cause them to leave the scene. We must attempt to understand the problems,

Request for reprints to Westlake Hills, Newton, N. C. 28653.

Read before the Second General Session, Medical Society of the State of North Carolina, Pinehurst, May 23, 1967.

to determine the cause for their existence, and to cope with them in a logical and reasonable fashion.

The explosive advances of scientific medicine have created problems within our own Society. The salutary gains of the technological areas of medicine have caused the emergence of new sociologic, theologic, and economic concerns.

The Medical Society must evolve in a fashion to meet the educational needs of our members as they negotiate the uncharted straits of tomorrow. The state and county medical societies are now confronted with the need for a role somewhat different from that of yesteryear.

Article II of our own State Society Constitution, in talking of the purposes of the Society, says:

The purposes of this Society shall be to federate and bring into one compact organization the medical profession of the State of North Carolina and to unite with similar organizations in other states to form the American Medical Association with a view to the extension of medical knowledge, and the advancement of medical science; to elevate the standards of medical education and medical service, and to promote friendly intercourse among physicians, and to enlighten and inform the people with regard to the great problems of medical care and public health, so that the profession shall become more capable and honorable within itself, and more useful in the prevention and cure of disease, and in prolonging and adding comfort to life.

These words were probably written over a hundred years ago. There may have been editorial changes since, but the concepts set forth are valid today. Each succeeding generation interprets the Constitution as it fits the need of the time.

Competition in Medical Education

The vast changes recently created in society as a whole require a re-evaluation of the role of the Medical Society itself.

There was a time when the physician was the most broadly educated or one of the best educated men in his community in the sense of true education. The great mass of scientific knowledge extant today has created a problem for medical educators. This problem is how to implant the maximum amount

of this knowledge in the brain of the student in a given period of time. Medical education is beginning to be dominated by the field specialist. The physiologist, the chemist, the physicist, the clinician, all compete for the available space in the student's mind. It is a constant tug of war for precedence.

In order to achieve the goal of implanting scientific matter, the teaching program of the medical schools is being forced back into the premedical or academic college. Each year we find more and more technological instruction and therefore lengthening of the so-called postgraduate or residency years. This superemphasis on science may be a requisite of the first order; yet we seem to have stopped *educating* the physician and for some reason or another appear to be just *training* him, along narrowly scientific lines and without the needed background in the humanities—the social sciences, the arts, history, and language. By pushing basic science training back into the academic college, we further limit the available time for studies leading to a more broad education. In the so-called graduate field, several recent A. M. A. sponsored studies have indicated a need for a physician *sui generis*. Call this particular man what you like—family practice physician or other—it is very obvious that he must have education as well as training, if he is to be competent in this particular field.

An even more complex division of medical practice is in the offing. Today we are confronted with the specialist and superspecialist. We cannot help believe that as we go along this road, our "education" will become even more like stovepipe vision, and we will have increasing need for a facility to keep us abreast of the nontechnological aspects of our practice.

Industry has learned that education in fields complementary to business is a requirement in their effort. We may even need to accept one of their concepts with reference to a managerial category, and apply it to our vaunted team approach to the valedudinarians that come to us for help.

Role of the Society in the Socio-economics of Medicine

The socio-economics of medicine is an area in which we must be increasingly involved. Let us try to break down this coined term in terms of our need. "Socio," of course, is derived from "society" or "social," and thus becomes a combining form for "sociology." "Economics" is a misunderstood word. When used in connection with medicine, some people too quickly associate it with the dollar economy of the individual practitioner. The Greek word *oikos*, meaning house, forms the first part. "Nomics" probably is derived as a variant from *neimen*—to manage, or *nomos*—a law.

I can live with and defend a definition that says medical socio-economics is a function or study which deals with the management under the law of the house of society. Transpose this to read, "the management of the house of the art and science of medicine."

The house of medicine for this State or any other is the state medical society or association, and its component or constituent societies.

Aesculapius and Hippocrates each stated that we who follow in their footsteps shall continually be students and teachers. If the medical schools cannot find the time to teach the socio-economics of the practice of medicine as we have defined it, and if the academic colleges find pressures upon them to tailor their premedical programs to an over-balanced scientificism, then someone must step into this hiatus thus created.

Who can? The state medical organization can and should. It has been asked, Whither goest the State Medical Society? What is its function for the future?

There was a time when the State Society was the prime center of the secondary dissemination of scientific knowledge. Today, with the emergence of the specialty societies and their well-developed scientific programs, state, regional, and national, we find that they have taken over a part of this function of the State and county society. Unfortunately we also find that certain of the specialty

groups are developing programs which are on collision course, one with the other, in the area of specialty economics to the end that eventually no one group will speak for medicine. This is deplorable and certainly a waste of time, effort, and manpower.

A Plan of Operation

A rehearsal for excellence is now proposed:

That the State Society direct its efforts toward instruction in the socio-economic aspects of the practice of the art and science of medicine. That it formulate its annual and district meetings around this concept. The business of the operation of the Society, its confrontations with proposed legislation, its decisions regarding trends in the greater society—all these matters can be handled by some expansion of this particular mechanism of operation.

1. Let the Council and House of Delegates continue with its business of operating the Society, expanded if need be.
2. Bring the specialty societies into the fold and give them the responsibility of scheduling the program format for the Scientific Sections under the overall guidance of arrangement committees on which each specialty society, would be represented. Do this with the view of presenting discussions dealing with the scientific impact of the socio-economic, philosophical, and even theological concerns of organized medicine as it continues its course toward the quality of excellence.

Concomitantly, the General Sessions should be devoted to the broader aspects of the area of socio-economics. By this is meant the development of a forum for the exchange of ideas. This part of the now developed triangular pattern would envision the involvement of *multidisciplined* people by whom education in the social sciences, certain of the other humanities, the law, and the ministry could be disseminated as they involve the practice of medicine.

An approach to this concept is being made in this, the 113th Annual Session of our Society. If the subject matter of the presenta-

tions in the General Sessions, in the several sections, and in the audiovisual programs is analyzed, it will be apparent that a large emphasis has been placed in areas created by the shifting socio-economic responses to the technological advances of medicine and the changing mores of society as a whole.

It is under this concept that we can vitalize the state and county societies, and it is in this fashion that we can bring light upon problem areas that do exist.

Fred de Armond, as quoted in a Rotary Club Bulletin recently, said in speaking of our present age:

We are living in an age saturated with sweetness-and-light conformity. Vulgar dissension is frowned upon by the best people. If you want to get along in the world, let error pass unchallenged. To argue, we are told, violates the most express commandments for winning friends and positive living. It is high time that some iconoclast rise up and oppose this counsel of all take and no give.

It is also high time we realize, as Nicolo Machiavelli said:

There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.

Regardless of what Hippocrates might have said in his *Precepts* when he commented, "If for the sake of a crowded audience you do wish to hold a lecture, your ambition is no laudable one, and at least avoid all citations from the poets, for to quote them argues feeble industry," I have, during this address, included some of the contemporary writers and some of the ancients. To further clarify this presentation, I would follow up what de Armond said and change his last sentence to read: It is high time that people arose and opposed a counsel of *all give and no take*.

Which of these two readings is best for these times is difficult to decide. "All take and no give" could be applied to some physicians who wish to have things done for them and do nothing for themselves as far as organized medicine is concerned. On the other hand, "all give and no take" could apply to the position in which we apparently are being pushed by bureau and depart-

mental directives in connection with regulations and schedules.

We have discussed the Society in terms of the role of teacher in the socio-economics of medical care. There is another area in which we must assume the lead.

Plans are being made, scripts are being written, and lines are being memorized by numerous groups who are involving themselves in the health care field. This Society must become involved with, and selectively participate in, the many health care projections to the end that ill-conceived and poorly effectuated plans will not be foisted upon the public and upon the taxpayers without assurance of need and reasonable expectation of successful operation.

This year we have, as a Society, asked ourselves into projects involving health care planning even though we were not asked. It is felt that our intervention in several areas has advanced the common good.

We must, as a Society, assume leadership in all matters relating to health and medical care. It is only by an aggressively interested involvement that we can give to society the benefit of our special knowledge and balanced judgment. From each physician will come the plea: Give me more time, and I will participate even more. This is a just plea and leads into the third phase of a rehearsal for excellence whereby we may be able to develop more time.

Undoubtedly, the next ten years will bring striking changes in the patterns of medical practice. I do not speak here of the application of science, but the sheer mechanics of operation. Here again, the Society can assume the role of teacher by offering symposia on time-saving procedures—education in delegating minutiae easily attended to by others and yet so consuming of physicians' time—organization of effort, and other matters—all of these economies to the end that we might even have more time for discussions with the patient regarding his or her problems.

The future of this Society, the future of American medicine, and indeed the future of the health of the American people, is in the hands of the doctors of medicine and

their associates in the health care field. What will be done about their future is a prime responsibility of the medical profession.

Conclusion

As President of a State Society, the individual has only one shot at being good or bad. In closing these comments, it must be said by this now almost past president that he has been impressed with the dedication of so many, many medical men to their profession and to the common good of all the

people during this past year. He has one wish, and that is that each and every physician in North Carolina, and every citizen of this State, could be truly aware of the time and effort expended without hope of dollar remuneration by so many of their fellow citizens who happen to be doctors of medicine, as they have labored in the organizational vineyards of Hygeia for the benefit of all their fellow citizens.

My thanks to all for the privilege of serving, and since custom demands it—*vale*.

The Conquest of "Inner Space"

MILFORD O. ROUSE, M.D.*

The challenge of so-called "outer space" commands tremendous attention in current times, as evidenced by several papers, exhibits, and motion pictures presented at this session of the Medical Society of the State of North Carolina. But I wonder how many of us stop and think of the challenge of "inner space?" I am not speaking of just the space between our ears but of the inherent resources, capabilities, responsibilities, and opportunities that are ours if we will recognize them.

In all sincerity I would like to invite you to join with me in the intriguing project of "re-valuation." I do not mean "re-evaluation," which would call only for a review of goals and methods of attaining them. Instead I speak of that tremendously challenging project of honestly probing my own personality to get a new conception of the resources, responsibilities, and opportunities that are mine and then proceeding to utilize and develop to the optimum every resource and capability that is mine.

Each of you, as do I, realizes that an unlimited future is ours when once we set ourselves to the exploration, discovery, utilization, and development of "inner space."

Each of us with pride can recognize the

tremendous accomplishments of medicine in this great country of ours.

Problems and Opportunities

As all of you know quite well, we in medicine face a complexity of scientific challenges, stimulated by the rapidly changing dimensions of medical knowledge.

We also face many other challenges involving education, organization, cost of health care services, socio-economic changes, legislation, and public relations.

Despite the almost countless number and variety of these challenges, we cannot look upon them simply as difficult or annoying problems. Instead, it is imperative that we view them as opportunities for American medicine to demonstrate its vitality and leadership.

If we are to cope with existing and anticipated problems in the health care field, the medical profession must be prepared to seize the initiative and keep it. The big, umbrella-like challenge before all of us—individual physicians, county and state societies, specialty groups, and the American Medical Association—is *the challenge to do better*. If we do not meet it, we shall find eventually that non-medical quarterbacks are calling more and more of the signals for us.

This possibility was pointed up in a rather disturbing fashion just last month at the annual meeting of the American Society of Internal Medicine in San Francisco. At that

Read before the Medical Society of the State of North Carolina, Pinehurst, North Carolina, May 22, 1967.

*President-Elect of the American Medical Association.

Request for reprints to 1719 Pacific Avenue, Dallas, Texas 75201.

meeting Dr. Philip R. Lee, assistant secretary for health and scientific affairs in the Department of Health, Education and Welfare, described the new National Center for Health Research and Development, now being organized in the U. S. Public Health Service.

To illustrate what I mean, here are a few pertinent paragraphs from a *San Francisco Examiner* news story reporting Dr. Lee's speech:

The American health service system is about to undergo the same critical and hard-headed study General Motors or Ford would give a proposed new sports model, according to the nation's top federal health officer.

It will be a scientific, coordinated examination to spotlight defects and to substitute modern methods for the hit-or-miss approach. . . .

He (Dr. Lee) said the center will call on private industry, economists, sociologists, and many others to give the nation's health care programs their first truly scientific scrutiny.

"The system needs very searching analysis," he said, "and major improvements are possible. We will expose the whole system to a more searching study and identify the areas which are susceptible to improvement."

Dr. Lee said the center will use the sophisticated techniques of "systems analysis," developed in modern industry.

For example, it will look into the possibilities of automation in medical laboratories—and the possible establishment of community laboratories as "public utilities" serving all of an area's hospitals and doctors.

It will study the effectiveness of the Medicare and Medicaid programs and possible changes for their improvement.

It will examine the functions of the so-called "physician assistant," a new role which is being developed to ease the national shortage of doctors.

Dr. Lee said his department is negotiating a contract whereby Rand Corporation would carry out the studies in cooperation with HEW.

"Medicare and Medicaid have brought a lot of the problems to light," he said. "We can't keep them under the rug any more. The public wants solutions to current problems, and we are bound to find those solutions."

Disturbing Implications

Ladies and gentlemen, if you want to think about problems, there is quite a package of them—all wrapped up in the agenda of a proposed study by the federal government. In addition to its general tone—which

carries implications and overtones of a "probe" or an "investigation" or even a "trial"—several things disturb me. For example:

I wonder if our health care system can be studied in the same way as a proposed new sports model car.

I question whether our medical progress in this country has resulted from nothing more than a "hit-or-miss" approach.

I hope that the "many others" to be called on in the study will include physicians, hospital personnel, public health officials, and others with first-hand, professional knowledge of the subject at hand.

I seriously doubt whether the so-called "sophisticated techniques of 'systems analysis'" can properly be applied in the field of health care, which involves so many human, personal, and subjective factors.

I am deeply concerned over the injection of the "public utility" concept into our health care system. Incidentally, in that connection, the International Longshoremen's and Warehouseman's Union recently passed a resolution favoring legislation which would declare the nation's hospitals to be public utilities, thereby subject to rate regulation.

At any rate, I believe that this projected study demonstrates sharply that the *medical profession must establish and maintain effective research and development mechanisms of its own*, in addition to consultation and active cooperation in the activities of the center mentioned earlier.

Above all, and regardless of specific mechanisms, it shows clearly why we in medicine must assert ourselves and provide constructive action in solving whatever problems exist.

As I have said, those problems are many and varied. However, I believe that most of our major concerns lie in three general areas: medical education and training; (2) the organization, costs and financing of health care services; and (3) the role of the federal government.

Medical Education

Quality and content

In the field of medical education today, for

example, there is a vibrant spirit of change, experimentation, and expansion. Working in a healthy climate of understandable and commendable scientific unrest, medical schools all over the country are examining the quality and content of their educational programs. They are seeking the best possible ways of presenting a coordinated body of medical knowledge which will prepare the physician for practice in the changing scene of modern medicine. The entire profession must encourage and assist all sound experimentation aimed at that goal.

Despite the tremendous progress made since the Flexner Report almost 60 years ago, and despite the fact that the United States has become the generally recognized world center of medical education, we still have to keep on asking ourselves questions.

Is our system of medical education good enough to meet the needs and demands of a changing society—now and in the years ahead?

Are the standards of quality in teaching threatened by excessive concentration on research?

Are divided loyalties between teaching and research tending to splinter the education effort?

Are the medical schools producing to capacity commensurate with quality?

What and where are any deficiencies in our system of medical education?

How do we implement the new A.M.A. policy, adopted at the 1966 Clinical Convention, calling for the development of programs to educate and train large numbers of family physicians for the future?

What viewpoint or action should we take on the recommendations of the Citizens Commission on Graduate Medical Education, which were similar in many respects to the ideas embodied in the new policy which I just mentioned?

These are but a few of the questions relative to the quality and content of medicine's program's for educating and training medical students, interns, and residents.

Continuing growth

In addition to the quality of medical edu-

cation, we must face up to the challenge of quantity and the need for expansion in the years ahead. Even though we have been encouraging and urging the construction of new medical schools and the expansion of existing schools during recent years, we cannot be complacent over past and present accomplishments in keeping pace with the growth of our population.

Looking ahead to the needs of the future, and analyzing carefully any potential variations in those needs, *we must provide effective leadership* in accelerating a sound, continuing growth of our medical education system.

Going beyond the supply of physicians, a new A.M.A. Committee on Health Manpower has begun a long-range program designed to help increase the supply of all types of personnel needed to meet the future health care needs of the nation. To help achieve its objectives, this committee will make detailed studies of the structure and function of the health team in various settings, in order to determine *the most efficient ways it can be organized to deliver total health care*.

As we work to expand and improve undergraduate and graduate medical education, we also have to extend our efforts to meet the challenge of postgraduate education. Recognizing that medicine is a lifelong study, which is only beginning when the young doctor receives his M.D. degree or completes his intern and residency training, all physicians and medical organizations have a responsibility to aid and participate in the development of sound programs for keeping the practicing physician abreast of scientific advances.

In this connection, I wonder if today's practicing physicians are taking advantage of the opportunities they have for close association with the young men and women who are in medical school or taking their intern and residency training. I hope to see the time when every medical student, intern, and resident has a "Big Brother," in effect—a practicing physician who will keep in close contact, to counsel the young person regarding his studies, his possible specialty, internship and residency, and perhaps even the

place where he will eventually practice. These young people will be our professional colleagues and the workers in organized medicine in the years immediately ahead. I believe we should do everything possible now to help them as they complete their initial, formal training.

Related to medical education, training, and the organization of health care services is the growth of specialization. Our challenge here is to find ways and means of balancing and coordinating the efforts of family physicians and specialists—particularly in view of the new A.M.A. policy aimed at producing more family physicians to meet the need for continuing comprehensive medical care. If this policy is to work, it is up to all of us to see that residencies in family practice are available, and that these new specialists are assured of consideration for hospital staff appointment in whatever community they locate.

We must make objective, continuing studies of the changing needs in all categories—bearing in mind that scientific advances in the future might conceivably alter our perspective on the whole subject. We must try to channel specialist services into overall programs that are better tailored to meet the complete health needs of the people.

However, those needs never will be met adequately through cold science and technology alone—no matter how many amazing computers and IBM machines may be devised for use in medicine. We have the additional challenge, throughout the entire period of medical education, training and practice, of *re-emphasizing human values and revitalizing the personal relationship* which is so important to successful health care for the patient as a whole—in other words, as a person rather than as a case or a syndrome.

Costs and Financing

Turning to the area of costs and financing, and regardless of the passage of Medicare and Medicaid legislation, it is imperative to realize that we must continue our efforts to stimulate the maximum growth and improvement of voluntary prepaid health insurance for the entire population. An im-

portant part of this challenge is to promote pricing practices by physicians which will enable the health insurance industry to sell good protection at a cost most people can afford to pay.

We must ask ourselves whether we are attacking as forthrightly as we should the problems involved in rising health care costs and expenditures, particularly for hospital services. After all, it is primarily the physician who determines the kind and amount of medical care his patients receive.

Every professional decision and service has a price tag—a prescription, an operation, a diagnostic procedure, an x-ray, a lab test, a recommendation for hospitalization or bed rest. The physician, rightly concerned with the highest quality of medicine, must also become much more aware of costs and expenditures, of the economics of medical care; of his obligation to help his patients protect their health-care dollars.

The A.M.A., with the help of state and county societies, can play an important role in educating physicians to these responsibilities. In this connection, we should explore the function of third parties as a mechanism by which economic barriers can be lowered—even if they are not eliminated—and through which health-care dollars can be used even more prudently and in the best interests of patients.

This will require better understanding and liaison with labor, business, industry, consumer groups, and all other third parties involved in the provision and financing of medical services. We must prove to them and their beneficiaries that it is to their advantage to preserve, wherever possible, the principle of freedom of choice of physician and of facility, and the right of the medical profession to judge the qualifications and competence of physicians and hospitals.

To do so, however, we also have to come to grips with such pressing problems as quality controls, ethics and discipline, and the organization and distribution of health care services.

We can and should act more aggressively to insure high quality in all areas of medicine and to move against any incompetent

and unethical persons who would distort the profession's image.

Delivery of Health Care

Whether we like it or not, we must recognize that a changing pattern is emerging in the organization and distribution of health care—with decreasing emphasis on solo practice and increasing emphasis on group practice, clinics, and medical centers. Unless we take the initiative, the medical profession is in danger of being ignored as this new pattern develops. It is being shaped to a greater and greater extent by a triad of forces including the federal government, the university-medical school complex, and the hospital system.

This is a powerful combination, gaining strength from the billions of dollars of federal funds now available, and given impetus by new laws such as Medicare, Medicaid under Title XIX, the regional heart disease, cancer and stroke programs, and federal aid to medical education.

It is essential, therefore, that we continue to work vigorously for any legislative and regulatory changes or amendments which we consider to be in the best interests of both the profession and the public. It also is necessary that we continue to be alert in *opposing any undue or dangerous expansion of governmental health care programs.*

On the positive side, and under predominantly private auspices, the profession must launch a continuing program to improve existing services and establish needed new services for the total population. This proposal was first made at the most recent clinical convention of the A.M.A. by our very able president, Dr. Charles L. Hudson, a citizen of your fine state and a member of your own State Society. Carrying it out requires both local surveys of need and local plans for implementation.

I am pleased to report that in my own home county, the Dallas County Medical Society has made a strong start on just such a program. In January of this year, the Society launched a community-wide Commission on Health Services, with 10 physician members and 30 members from civic organi-

zations, governmental agencies, and other groups interested in health.

The Commission's responsibilities include not only survey and planning, but positive implementation. Its leadership has been provided by medicine.

To do these jobs throughout the nation, we must give careful attention to strengthening our own federation. If the A.M.A. is to be effective nationally, it must be effective locally. We have to work toward the day when every medical society is looked to by the people in the community as the principal source of leadership in health—as the fountainhead of varied programs and activities involving physicians and laymen working together for the public good.

If we are to contain the threat of ever-increasing government involvement in medicine and all other facets of American life, we must prove to the people and to the congress—by positive, progressive, imaginative actions—that we and our allies are *capable of leading and willing to lead* a medical program that will meet the health needs of all Americans . . . now and in the future.

As I have said before, and as I shall repeat many times again, our greatest challenge is to provide leadership, guidance and advice which will help preserve freedom and individuality—not only in medicine and medical legislation, but throughout the fabric of American life.

Now, more than ever before, the times call for effective and positive unity and harmony among all of us in medicine. Freedom of thought and freedom to disagree will always prevail, but if the A.M.A., your State Society and your county societies are to be the voice of medicine in your communities and state, then differences of opinion should be set aside when once the majority preference has been established, and all members must work together to implement society actions through wholehearted cooperation.

Conclusion

I can sum up the future, as I hope to see it, with these few questions:

Constructive voluntary cooperation with government? *Yes.*

But apathy? Discouragement? Continued frustration? Surrender of the principles of personal initiative and private enterprise? *Never.*

I have boundless faith in American medi-

cine's ability and willingness to assume and to maintain successful leadership in health. And nobody has ever yet gone wrong having faith in the strength and unity and dedication of American medicine.

Utilization Review: How to Make it Work

MICHAEL F. KELEHER, M.D.

My interest in utilization committees goes back a little more than two years when I became chief-of-staff-elect of Memorial Hospital in Asheville. It was about this time that we began to hear a great deal about these committees as required by the Joint Commission on Hospital Accreditation and later by the Social Security Administration as Medicare moved closer to realization. We began to explore what a utilization committee's functions would or should be, first having to convince ourselves and some staff members that such a committee was not only a medical necessity but a forthcoming requirement that we could not skirt. As we got deeper and deeper into the subject our interest in it increased, and we became convinced that rather than the monster we had first anticipated, utilization review was necessary to the proper functioning of any hospital and to the improvement of medical care.

Dr. J. Everett McClenahan, medical director of McKeesport Hospital, McKeesport, Pennsylvania, is called the father of the Utilization Committee. The committee in his hospital was organized in 1958 and has since been in continuous operation, with an ever-expanding scope. Dr. McClenahan refers to the pre-Medicare utilization committee versus the post-Medicare utilization committee. Before Medicare, the function of a utilization committee was primarily physician education, whereas the function of a post-Medicare utilization committee is a requirement of law. There is a vast difference between the two. In the pre-Medicare utilization com-

mittee the high product of physician education was the end result; in the post-Medicare utilization committee the cost factor is foremost.

To be accredited by the Joint Commission on Hospital Accreditation, hospitals have been required, since July 1, 1966, to have a functioning utilization committee. Medicare (PL 89-97) imposes the same requirement for hospitals approved as providers of medical services to Medicare patients. As Dr. McClenahan points out, it is unfortunate

For editorial comment see page 244

that pre-Medicare and post-Medicare committees have the same name; however, the concepts of both the pre-Medicare educational committee and the post-Medicare compulsory, cost-conscious committee can be incorporated into one active hospital utilization review committee. Ideally, physician education should take precedence over compulsory maneuvers to improve the quality of medical care.

Medicine at all levels should be interested in quality patient care. It is quality care that should be the basic philosophy of the utilization review committee. *All* patients benefit from the functioning of an active utilization review committee.

Need for Utilization Review

Proper utilization of hospital services is defined as that practice which admits the greatest number of patients who need hospitalization and discharges them after the briefest hospital stay consistent with their medical needs, rendering all the services they need during hospitalization, but no more.

The medical profession is under great pressure, from many sources, to assure

Read before a joint meeting of the South Carolina Medical Association and the South Carolina Hospital Association, Columbia, S. C., February 15, 1967.

Requests for reprints to 311 Doctors Building, Asheville, N. C.

proper utilization of hospitalization. These pressures come from (1) industry and labor, (2) state insurance officials, (3) commercial health insurers, and (4) Blue Cross associations. But the most important (though until recently not the most vocal) pressure should be the realization that proper utilization makes good medical sense and helps improve the overall quality of medical care for *all* patients.

Also, in most hospitals beds are at a premium, waiting lists are long, and establishing priorities of admission is like trying to hold a tiger by the tail. Doctors must agree to admit, treat, and discharge their patients with alacrity in order to free beds for other patients. Discounting other considerations, if every doctor kept every patient only one day longer than necessary, dozens of patients would be kept waiting to be admitted. No single doctor should be permitted this luxury at the expense of his confreres, or rather of his confrere's patients. So for very personal reasons, all doctors should embrace the philosophy of utilization review. (In many cases, this has been our strongest selling point to convince those on the hospital medical staff who rebel at being told what they should or should not do to cooperate with a utilization review committee.)

Discarding all outside pressures, then, utilization review should be the natural choice of a well-functioning medical staff, for good medical reasons, to promote better medical care. However, since we are living in the Medicare age, and since a utilization review committee is required of all hospitals to be approved as a provider of medical services to Medicare patients, the committee must be set up to function within the requisites of the Medicare law (PL 89-97, Title 18).

Two mechanisms are required:

1. A "live" or "on-the-spot" review of the medical necessity for inpatient services during a continuous period of extended duration. This particular part of utilization review can be termed *medical necessity determination*.

2. A retroactive review of admissions, duration of stay, professional services, and medications furnished, with regard to the necessity of admission and efficient use of hospital facilities and services. This function is known as *utilization evaluation*. Each hospital must, within the framework of Medicare requirements, develop its own utilization review committee and the mechanisms to carry out these functions, and then *do it*.

The characteristics of the utilization review committee will differ in different hospitals. However, certain necessary ingredients of all such committees will include (1) flexibility; (2) a knowledgeable cooperation between the admissions office, the medical staff, the board of trustees, and the administration; (3) awareness on the part of all concerned of the importance of utilization review to the hospital, to the medical staff, and to the patients; (4) the active help of the medical librarian; (5) a medical chairman who is interested and willing to devote time to the committee's work; (6) a group of doctors willing to serve on the utilization committee in an active and continuing capacity. It is not necessary to train doctors to serve on the committee; their training and knowledge will increase as they continue to serve.

As we have seen, utilization review as required by Medicare has two mechanisms which we call (1) medical necessity determination, and (2) utilization evaluation. Medical necessity determination is a new function for the medical staff in most hospitals, and has caused most of the unhappiness associated with utilization review. Basically, it (medical necessity determination) requires the following:

1. The definition of what is meant by an "extended stay" (usually 21-30 days).
2. A system of tagging charts which will require review in cases which become "extended."
4. A "flying squad" of physicians who review cases within subsequent seven days.
3. A reminder system.

5. A pattern for studying individual cases referred to the "flying squad."
6. A method of notifying the patient, the patient's doctor, and the hospital when the utilization review committee has studied the case and ruled that further stay in the hospital is not medically necessary. (Medicare benefits stop three days after this notice has been received.)

The second requirement of Medicare legislation for utilization is utilization evaluation. This concept, unlike medical necessity determination, is not or should not be new. Utilization evaluation is a retrospective study of the use made of the hospital's facilities and beds. This segment of the utilization plan is related to the medical audit, which has been around for some years.

The scope of utilization evaluation is concerned with answering these questions: (1) Was the patient's admission to the hospital necessary? (2) Was he treated as expeditiously as possible, with a minimum of delay in the prescribed treatment? (3) Was he discharged as soon as he was medically ready?

The similarity of this process to the medical audit is apparent, but there is a difference. The medical audit is defined as the evaluation of the quality of medical care as reflected in medical records. The difference between this and utilization evaluation lies in the word *quality*, and is a difference in scope. Quality is defined as the degree of conformity to standards of accepted principles and practice. The desired standards of excellence demand that certain fundamental things be done for all patients, that another absolute minimum battery of tests and procedures be done for specific types of patients, and that finally, in all instances, investigation, diagnosis, and treatment be tailored to the individual patient. These standards should be those that each physician would like to have met if he or a member of his family were the patient, and this should be the goal which he sincerely tries to maintain in his own practice. Thus, the medical audit is a utilization evaluation, but considerably more.

There are four bases of comparison which the utilization review committee can use in this self-appraisal and analysis. They are:

1. The profile of an individual hospital compared to that of another hospital of similar size and function.
2. The profile of an individual department in a hospital compared to that of a similar department in a similar hospital.
3. The profile of an individual doctor in a department compared to that of other doctors in the same department.
4. The profile of an individual doctor compared to that of a similar doctor in the same department of a similar hospital.

These profiles, drawn from statistics, provide a standard for comparison with other hospitals, departments, and doctors.

Adequate medical records are the key to any utilization review. It has been said that a hospital is as good as its medical records and its record room. By the same token, a good medical librarian is absolutely necessary. Doctors will improve their records voluntarily as the effects of the utilization committee are felt. Utilization evaluation is, in effect, self-analysis on the part of each doctor as to his own care of his patients, and the results of such self-analysis and self-appraisal can only be good.

It is important and necessary for the medical staff to keep adequate records. Ninety percent of the problems of utilization review and medical audit are due to poor, incomplete, or inadequate records. A poor record may not reflect poor medical care, and conversely, a "good" record does not necessarily mean good medical care. But a committee reviewing the patient's hospitalization has nothing else to judge by, unless they personally examine the patient or interview the physician. This should rarely be necessary.

Parenthetically, it should be said that poor medical care does not necessarily show up in mortality statistics. The human organism is remarkable resilient and will survive despite poor medical care.

Criticisms of a Utilization Review Committee

In discussing what the utilization review committee is and what it should do, it is necessary to take note of adverse criticisms and point out particularly what a utilization review committee must *not* do.

1. The utilization review committee must not begin operations without first enlisting the knowledgeable support of the medical staff.

2. The utilization review committee must not represent only part of the medical staff. All departments should be represented, and by the most capable man available from each department.

3. The utilization review committee should understand that its authority is limited to utilization review. It is not to be concerned with bookkeeping, admission policies, pharmacy practices, or laboratory and x-ray schedules, etc.

4. The utilization review committee should avoid exacerbating interdepartmental rivalries. It should be absolutely immune to bias.

5. The utilization review committee should not hold executive power. It is a fact-finding and educational committee only. Any recommendations regarding disciplinary or punitive action should be made to the executive committee and administration of the hospital.

6. The utilization review committee should not dictate to individual doctors or impose artificial criteria or guidelines on staff doctors. The judgment and authority of the individual physician in every case should be weighed heavily in all committee discussions.

7. The criteria of the committee should be broad enough to allow for unusual cases. The committee should not hold doctors to pre-established blueprints for hospital stays, standardized for each disease without regard to its clinical course. Failure to observe this precaution invites criticism, harassment, and humiliation of each doctor who has a patient requiring a longer stay.

8. The utilization review committee

should not exert *too* much control. Excessive control tends to force the staff to discharge patients too soon—without regard to social factors such as home conditions and the availability of alternative facilities, which affect a hospital stay. These are nonmedical factors, to be sure, but they affect a medical judgment about a case.

Too strict utilization controls may shackle a doctor's judgment. The attending staff member's judgment should be of prime consideration. His decision should not be challenged, nor should his patient be penalized because in certain cases his judgment proves, in retrospect, to be mistaken. For example, a doctor has a patient with chronic abdominal pain. He admits the patient to the hospital, orders serial x-ray films of the upper gastrointestinal tract, finds a gastric ulcer, and recommends surgery. The operation is performed, a small early cancer is removed, and the patient is cured. The patient, the doctor, and the insurance carrier are all happy. Another patient with the same type of pain, evaluated by the same doctor, is admitted, and undergoes the same procedures, but no lesion is found. Was the admission unnecessary? This is a matter for the physician's judgment, not the committee's.

9. Too much control by the utilization review committee may incite third party interference in medical decisions. This is a very real threat, and one which many doctors fear is only one step away from official control of medical practice. But this very fear can be a factor to encourage doctors to become more active on these committees and thus retain medical control, co-operating in the effort to achieve quality medical care, but resisting interference by third parties that are guided by other than medical considerations. It is the medical staff's responsibility, not only to themselves but to their patients, to define good utilization, and not to leave this decision to the politician.

Making It Work

Up to this point we have talked about the what, why, how, and what not of utilization review. Making it work is quite another

problem. How to get the work done quickly, efficiently, and with the least ruffling of feathers must be decided within each individual hospital. The most important thing is to obtain the active cooperation of the medical staff. This can be done only by a process of education, telling each staff doctor what the committee is and why it is there and why it is necessary. Every year seems to find staff doctors involved in more and more committees and functions. Doctors are not unreasonable men, but they are beginning to think that the demands being made on them are unreasonable, leaving less and less time for their original and basic task—taking care of patients. They must be shown that utilization is a service to their patients, indirect but necessary. It should also be emphasized again and again that the utilization review committee is a fact-finding and educational committee only. It has no punitive function whatsoever.

Showing doctors the value of utilization review and leading them to accept its underlying philosophy is a slow process. Acceptance cannot be coerced by law or any other external means. Even in hospitals where utilization review has been in effect for five years or more, some resistance remains. Many doctors bitterly resent what they consider to be unwarranted interference with the doctor-patient relationship. It may be true that these men can be forced into line by being told to accept or resign, but this attitude breeds anger and resentment and should be assiduously avoided whenever possible. With rare exceptions, doctors are truly interested in giving their patients the highest quality medical care. If they can be convinced by argument or example that utilization review does this, the majority will accept and, hopefully, actively promote it.

The functions of a utilization review committee can be boring and tedious if done perfunctorily, or interesting and vital if done properly. The size of the committee will vary with each hospital. A minimum of five doctors has been suggested, with about 15 doctors serving on a committee for a 300-bed hospital. (These figures are only suggestions, subject to hospital and medical

staff variation.) In addition to members of the medical staff, the committee should include as advisers a representative of the social service department, the head of the operating room, the records librarian and a representative of the house staff.

The utilization review committee or a substantial part of it should meet at least monthly with an executive group from the committee meeting weekly. The charts of all patients, not just those enrolled in Medicare, are reviewed once a week by an on-the-spot subcommittee, usually consisting of one or two men. Charts requiring discussion and additional information are brought to the weekly meetings of the committee. In many cases, the attending physician is consulted. We have learned that this discussion will usually clear up any questions concerning the case and provide the answer regarding disposition. Any information obtained from the attending physician will make possible a more complete presentation of the case to the utilization committee.

The utilization review committee should not hesitate, if necessary, to call a physician into the committee meeting to discuss one of his cases, and no physician should be reluctant to appear, though human nature often rules otherwise. He may provide information not found on the chart, answer questions, defend his care of the patient, and throw new light on the need for continued hospitalization. If his case does not meet the norm, this can be pointed out to him in a friendly, tactful way.

It must be said again that the utilization review committee, like the now well established tissue committee, is educational, not punitive. But as we all know, a physician who is asked to discuss a case with the tissue committee usually does not make the same mistake again.

When the committee decides that there is no medical necessity for continued hospitalization, letters are written to the patient (or guardian), to the hospital administration, and to the attending physician. In such a case, Social Security Administration benefits terminate within three days. Of course, the patient is not required to leave, but he

will have to look elsewhere for reimbursement.

Utilization evaluation, the second function of the Utilization review committee as required by Medicare, is being done in many hospitals by the medical audit committee. It is possible that these two committees may be merged into one for this function. Medical evaluation is a more leisurely retroactive process. It is not necessary to review every chart; one chart in 10 or 20, pulled at random, may suffice. Since much of this work is statistical, such services as the Professional Activity Study and the Medical Audit Program, which are available on a fee basis from the Commission on Professional Hospital Activity, Inc., can facilitate the committee's work and make it more meaningful. There are innumerable ways of using these statistics in the analysis of disease categories, characteristics of patients by age or any other factor desired, length of preoperative and postoperative stays, complications, etc. Profiles of individual doctors and

departments and comparisons with other physicians, other departments, and other hospitals are made relatively easy.

How much time should a doctor be required to give to the utilization review committee? Probably less than one-half day a month, or four hours per month is all that can be expected. It should be remembered that doctors are not clerks. All of the preliminary clerical work should be done by clerks or medical record librarians. Many charts, however, must be reviewed by a doctor, who alone can give a professional evaluation. The full committee should be large enough to spread the work over a fairly large segment of the medical staff without overburdening any one man or a small group.

Again, it must be pointed out that it is absolutely necessarily to have a chairman and a committee who will *work* and will work on a continuing basis. Otherwise the committee will be stillborn, and, to mix metaphors, will fall on its face.

Medical Education and the Practice of Medicine

The Town and Gown Syndrome

CHARLES W. STYRON, M.D.

On December 1, 1964, there died in India a famous professor, biologist, geneticist, and philosopher of the life sciences. His name was J. B. S. Haldane. His father before him, you may recall, was the physiologist, John Scott Haldane, who developed the decompression method for avoiding "the bends."

Dr. Haldane the younger said that the society is freest in which opportunity for acting according to one's genotype or hereditary make-up is maximized. He said further that "the genetic heaven must be a place in which there is room for all sorts of people, each best at something or other."

He said also: "Would anyone think of producing only one species of dog and calling it the perfect dog, eliminating all the others?"

What makes human life amusing is getting all these varieties of dogs into one family. And the hope for humanity is that that sort of thing should go on, not only among dogs, but among human beings as well."

And in so doing we have created the doctor's dilemma, in which we believe that two opposing factions, the academic practitioner and the private practitioner, have developed a tug-of-war or syndrome. There are two points of view as to how this dilemma can be expressed: one, by the true tug-of-war in which the vector remains isometric as a single point in space; and, two, in which the angle of the forces by the two factors involved is less than 180 degrees, say 45 degrees, and the resulting vector is approximately between the two, depending to some degree on the relative value of the two forces exerted.

Obviously our points of view are not dia-

Read before the North Carolina Society of Internal Medicine, Winston-Salem, North Carolina, December 9, 1964.

Request for reprints to 615 St. Mary's Street, Raleigh, N. C.

metric, and therefore, in all fairness, we must admit that the latter of the two diagrams is the correct one. If this is so, we are really going in approximately the same direction.

First consider the difference between private practice and university practice. The differences are obviously environmental. The private practitioner has the advantage of directing his total attention to patient care. The university practitioner has patient care at the core of his interest, but associated with patient care, he represents the university in (1) student education, (2) research, and (3) general medical education in its broader aspects. As a teacher he is expected to impart fundamental principles, to encourage discovery, to evaluate the student and urge him to critically evaluate himself. As a university physician he is expected to be the source of current information and its producer, and to be an expert in at least one area of clinical medicine. Under the circumstances, if the practitioner changed places with the educator, the differences between the two would still exist, although I dare say that each would be uncomfortable until he became acclimated to his new environment.

The educator cannot assume primary responsibility for medical problems beyond the school—nor should he be expected to do so. His interest in these problems is not local, but world-wide, and we must recognize the difference. The general character and emphasis of the medical school, and of the personnel, dictate indirectly the course which the student chooses to take, and often the course is an academic career. Today this choice is made easier for the student. Means for various types of postgraduate study are available for the asking, even to the student of moderate intellectual capacity. I cannot say that I blame the student very much if he remains in an academic environment.

The second dilemma has to do with emphasis on medical education—and herein lies the rub. In the past ten years there has been a twentyfold increase in funds available for medical research. From 1940 to 1961 government support of research increased from 3

million to 526 million dollars. Industrial funds increased from 25 million to 250 million dollars. Other sources also showed increased support.¹ So far as I am aware, no effort has been used to relegate a portion of these funds to clinical teaching.

With the increase in available research funds, the balance between clinical medicine and the laboratory has declined. With this disintegration, clinical tradition and disciplines have also declined, and have become less attractive.

The investigator has become the leader in medical education. His goals—in fact, his philosophy of medical education—differ from those of the clinician and the clinical investigator. His philosophy is reflected in the interest of the graduates.

Balance of clinical and laboratory medicine are essential if medicine is to serve its purpose—the care of the patient. The empiricism of the clinician has done more for medicine in the past, and will continue to do as much in the foreseeable future, as the laboratory. Adaptation of concepts is in the hands of the practitioner. Both the clinician and the scientist should be equally honored and supported. When this is done, the clinician will become a leader in medical education as he was in the past. The future of medicine depends on such a change.

We are here with different vantage points, attempting to tell our opposites how things ought to be done. Finally, therefore, on the Bard's four hundredth birthday, I quote from Shakespeare (*Hamlet* I, iii, 47-51) lines that can be used by either side.

Do not as some ungracious pastors do,
show me the steep and thorny way to heaven,
Whiles, like a puff'd and reckless libertine,
Himself the primrose of dalliance treads . . .

George Bernard Shaw said, in the Preface to *The Doctor's Dilemma*, "If you cannot have what you believe in, you must believe in what you have." Or, I may add, make efforts to change it.

Reference

1. Ruesch, J.: Decline in Clinical Tradition. *JAMA* 182: 110-115 (Oct) 1962.

Management of the Stroke Patient with Aphasia

RAYMOND MASSENGILL, JR., AND
CAROLE LEVINSON

At least two million people now living in the United States have suffered a cerebral vascular accident, or "stroke." About eight of every ten victims survive the acute phase of this disease, and most of them, although often seriously disabled, live for some years thereafter.¹ Many of those with serious disability have a language disorder—most often, aphasia.

Although it is common for patients who have had a stroke to be given a complete examination by a team of physicians, in some cases a language evaluation is not conducted. Every patient who has an aphasic condition should be evaluated by a certified speech pathologist as soon as his physician feels that language retraining can be initiated. The longer training is delayed, the greater the likelihood that the patient will be satisfied to get along with limited verbal communication, and will develop poor habits that might hinder his retraining.

Aphasia is one of the most challenging problems that the speech pathologist has to deal with. The literal meaning of the word is "loss of the power of speech." Penfield and Roberts² have defined aphasia as a state in which one has difficulty in comprehending one or more of the following: speech, naming, reading, and writing. It is associated with the misuse and/or the perseveration of words, but is not due to a disturbance in the mechanism of articulation, to involvement of peripheral nerves, or to general mental insufficiency. Wepman³ has pointed out that language problem manifests itself in the areas of symbolization, comprehension, and reproduction of concepts while the individual is using or attempting to use spoken or written symbols.

Aphasia results from brain injury due to trauma or stroke—in most cases, the latter.⁴ When the condition is first noted, it is necessary for the speech pathologist to conduct an

initial language evaluation in order to determine the type of aphasia present and the type of language retraining program that will be most useful. In addition to initiating this training, he counsels with the patient's family, explaining the nature of the disorder and discussing their role in the rehabilitation program. In many cases, the families of the patients treated in the Speech Pathology Treatment Center at Duke have some understanding of cerebral vascular accidents or have known someone who has suffered a stroke, but many have never heard the word "aphasia" or known anyone with this condition.

The purpose of this report is to describe the role of the speech pathologist in treating patients with aphasia following stroke, as well as to discuss certain general aspects of aphasia.

Diagnostic Aspects

The aphasic patient should be seen by the speech pathologist as soon as the physician feels that language retraining can be initiated. Before training can be recommended, a complete language evaluation should be administered.

Many of the testing procedures utilized by the speech pathologist consist of asking the patient questions and recording his answers on an examination form. The patient may be asked to point to objects, numbers, and letters, and verbally express his opinion on different subjects. He may be asked to read, write, and count; to feel objects and identify them with his eyes closed; to listen to a paragraph being read aloud and then answer questions concerning the content of what was read; and to complete mathematical procedures and similar tasks. The Eisenson Examining for Aphasia Test,⁵ consisting of a number of subtests, can be used for diagnostic purposes.

Eisenson⁶ has described three areas of change in the person with aphasia: symbolic

From the Division of Medical Speech Pathology, Duke University Medical Center, Durham, North Carolina.

disturbances and intellectual and personality changes. These changes are interrelated and all stem from the organic condition. He subdivides symbolic disturbances into evaluative (receptive) aphasia, which is an inability to evaluate information received through a sensory avenue and productive (expressive) aphasia, which is difficulty in evoking symbols. Evaluative disturbances may include such problems as *auditory aphasia* (difficulty in comprehending spoken language) and *alexia* (difficulty in comprehending written symbols). Productive disturbances may include *anomia* (difficulty in evoking names, usually nouns), *agraphia* (difficulty in using expressive symbols in writing), *acalculia* (arithmetic disturbances), *paraphasia* (reversals, omissions, grammatical errors, slips of the tongue), and *dysprosody* (disturbances in melodic patterns).

Both receptive or expressive subsymbolic disturbances may also be present in aphasic persons. These include *agnosia*, the inability to recognize a configuration via a given sensory avenue in the absence of a specific sensory loss; *astereognosis*, the inability to recognize objects via the sense of touch; *apraxia*, the inability to use tools for their intended purposes, such as the tongue for speech; and *dysarthria*, a disorder in articulation due to difficulty in performing the coordinate neuromuscular movements required for the production of speech. Dysarthria may involve respiration, phonation or articulation.

Areas of personality and intellectual changes may include attention and memory; perseveration (the tendency to persist in or continue an act of behavior after it is no longer appropriate); rigidity in thought and action; and the loss of the ability to deal with abstractions. In the latter the patient is situation-bound. He is unable to see similarities or make broad generalizations, has difficulty in analyzing and synthesizing, and is unable to project or pretend. He may also exhibit euphoria, withdrawal tendencies, the catastrophic response, or inconsistency of response.⁷

In testing the person with aphasia, there-

fore, the speech pathologist must consider the entire personality of the patient both before and after the cerebral vascular accident or trauma. According to Schuell,⁸ a differential diagnosis is the basis of both description and prediction in aphasia. Since a differential diagnosis is not possible on the basis of quantitative test scores alone, it is more meaningful to describe the performance of the patient in terms of types of errors and clinical signs. Aphasic patients may fail the same tests for different reasons.

In addition to the techniques just described, other means have been used to gain a better understanding of the patient's condition. Examples are the Wisconsin Card Sorting Tasks,⁹ testing the ability to discriminate between visually presented words,¹⁰ and automated visual perceptual discrimination training and transfer tasks.¹¹

The patient should also have a complete examination of the component parts of the speech mechanism. The mobility of the tongue, lips, and jaws should be evaluated as well as the action of the velopharyngeal mechanism. The phonatory quality of speech and the duration and intensity of phonation, can also be evaluated. The pattern of articulation should be reviewed.

Cinefluorographic analysis of different parts of the speech mechanism is often included in the examination at Duke. In one of our recent studies a positive correlation was found between the degree of speech difficulty for aphasic patients and lack of velopharyngeal closure as shown by cinefluorographic analysis.

Patients have been referred to the speech center with the diagnosis of aphasia when actually they had a dysarthric condition. The importance of a complete speech and language evaluation cannot be overemphasized.

The language evaluations will help determine at what level the patient's verbal language is impaired and also indicate what type of therapy should be recommended.

Treatment

Aphasic patients, being heterogeneous in

cultural milieu, age, medical history, intelligence, severity and duration of aphasia, and locus and extent of the brain damage,⁸ differ widely in their abilities. It is impossible, therefore, to outline a specific program of therapy that is applicable to all patients. In a general nature Corbin¹² described the following techniques as being useful with the aphasic patient: training in syllable formation, writing, language associations, and vocabulary building. In a formal training situation Schuell⁷ offers the following suggestions; that the patient identify objects in pictures named by the clinician, execute directions, paraphrase sentences, and write answers to questions presented by the clinician. Often needed words such as "doctor," "bed," and "food" should be incorporated early into the language retraining program. Manuals with therapeutic exercises may also be used by the speech pathologist in working with the aphasic patient.

An important part of the speech pathologists's job is to make sure that everyone who has a part in caring for the patient understands his language problems and the goals and objectives of the rehabilitation program.

Summary

Every patient with an aphasic condition following a cerebral vascular accident should be examined by a certified speech pathologist. This specialist, after evaluating the patient's language difficulty, will initiate a language rehabilitation program, counsel

with the patient's family, and discuss with the patient's physician the results of his examination and the therapeutic program which is recommended. The importance of early attention to the language disorder is of the utmost importance.

References

1. The President's Commission on Heart, Cancer, and Stroke; A National Program to Conquer Heart Disease, Cancer and Stroke, U. S. Government Printing Office, XI-12., 1964.
2. Penfield, W., and Roberts, L.: *Speech and Brain-Mechanisms*, Princeton, Princeton University Press, 1959.
3. Wepman, J.: *Recovery from Aphasia*, New York, The Ronald Press, 1951.
4. Bachus, O.: *The Rehabilitation of Aphasic Veterans*, J Speech Hearing Dis 10:153 (June) 1945.
5. Eisenson, J.: *Examining for Aphasia*, New York, The Psychological Corporation, 1954.
6. Eisenson, J., in Travis, L. (ed.): *Handbook of Speech Pathology*, New York Appleton-Century-Crofts, Inc., 1957, pp 436-449.
7. Berry, M., and Eisenson, J.: *Speech Disorders: Principles and Practices of Therapy*, New York Appleton-Century-Crofts, Inc., 1956.
8. Schuell, H.: *Differential Diagnosis of Aphasia With the Minnesota Test*, University of Minnesota Press, 1965.
9. Tikofsky, R. and Reynolds, G.: Further Studies of Non-verbal Learning and Aphasia, J Speech Hearing Res 6: 329-337 (Dec) 1963.
10. Felby, Y., Edward, A., and Seacat, B.: Word Length, Frequency, and Similarity in the Discrimination Behavior of Aphasics, J Speech Hearing Res 6: 225-261 (Sept) 1963.
11. Rosenberg, B.: The Performance of Aphasics on Automated Visuo-Perceptual Discrimination, Training and Transfer Tasks, J Speech Hearing Res 8: 165-181 (June) 1965.
12. Corbin, M.: Group Speech Therapy for Motor Aphasia and Dysarthria, Speech Hearing Dis 16: 24-27 (Mar) 1951.

It is not necessity, but fashion, which makes the use of carriages so common. Many people have not exercise enough to keep their humours from stagnation, who yet dare not venture to make a visit to their next neighbours, but in a coach or sedan, lest they should be looked down upon. Strange that men should be such fools as to be laughed out of the use of their limbs, or to throw away their health in order to gratify a piece of vanity, or to comply with a ridiculous fashion!—William Buchan: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, etc., Philadelphia, Richard Folwell, 1799, p 72.

INTRODUCTION TO SCINTILLATION SCANNING AND RADIOPHARMACEUTICALS

C. DOUGLAS MAYNARD, M.D.*

During the past decade the field of nuclear medicine has undergone such expansion and acceptance that the majority of the larger hospitals as well as the three medical schools in North Carolina have either established or are in the process of establishing nuclear medicine (radioisotope) laboratories. The growth in this field has been due primarily to the development of improved radioisotope scanners and new and better radiopharmaceuticals. Since the majority of physicians were trained prior to the expansion of this field, many are unaware of the diagnostic procedures now available to them. The forthcoming series of articles will attempt to give a brief, simplified description of the scanning techniques now available, the principles involved, the necessary preparation of the patient, the time involved in performing the procedures, as well as the value and limitations of each.

* * *

Introduction to Scintillation Scanning

Scanning is in many ways similar to diagnostic roentgenology in that radiation is employed to produce an image on a photographic film. In simple terms, with roentgenography the radiation is produced in an x-ray tube and directed through the patient's body to a photographic film located behind the patient. The image (or picture) is determined by the differences in absorption of the rays by the tissues encountered. In the case of scans, a radioactive compound is administered to the patient, and, following its accumulation in a specific organ or organ system, its distribution is "mapped out" by means of the scanner which detects the penetrating gamma rays (similar to x-rays).

The scanner (Figs. 1 and 2) consists of

a radiation detector (a scintillation crystal) which is motor-driven at a fixed speed back and forth across the patient's body over the area of interest (Fig. 1). The gamma emissions coming from an organ pass through holes in a lead aperture (are collimated) so that the crystal "sees" only the radiation coming from a small area beneath the detector. The gamma rays interact with a

For editorial comment see page 245

sodium iodide crystal and produce flashes of light or scintillations. These flashes are converted to electrical pulses by a photomultiplier tube located behind the crystal. The intensity of the electrical pulse is directly proportional to the energy of the particular gamma ray interacting in the crystal. Since each radioisotope has its own characteristic gamma rays with specific energies, scanners are equipped with analyzers which allow only the gamma rays of interest to be recorded.

Two different types of recordings (or pictures) of the distribution of radio-materials are obtained:

1. The electrical impulse may pass to a light source whose light intensity will vary with the amount of radioactivity detected. This light energy exposes an x-ray film (photoscan).

2. A "dot scan" is produced by having an electrical stylus burn dots on a treated paper. The more radiations coming from an area, the more exposed will be the x-ray film, or the more "dots" will be recorded on the sensitized paper.

One of the main disadvantages of organ scanning is the time required (for example, brain scanning—45 to 90 minutes). To reduce the time, scanners with multiple detectors or larger single detectors have been developed, and the past two to three years considerable work has been done to develop a radioisotope "camera" that can visualize the entire organ at one time, producing a very rapid image.

The most commonly employed "camera" at present consists of a large sodium iodide crystal backed by 19 photomultiplier tubes

*James Picker Scholar, Department of Radiology, the Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, N. C.

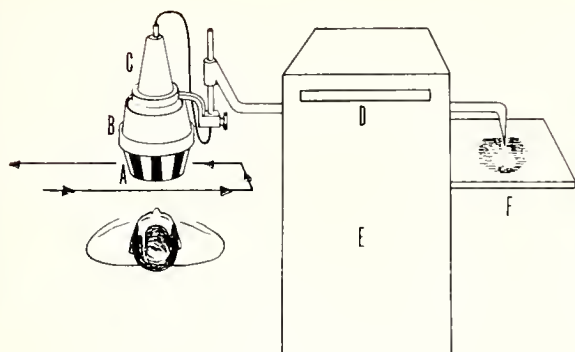


Fig. 1. Schematic simplified drawing of a rectilinear scanner. A. Collimator. B. Sodium iodide crystal. C. Photomultiplier tube. D. Recording system (photoscan). E. Electrical components to sort and utilize electrical pulses for "picture" making. F. Dot scan being produced.

(Fig. 3). Also under investigation are two other types: the autofluoroscope, consisting of a mosaic of sodium iodide crystals, and an instrument that is quite similar to an x-ray image amplifier.

The "cameras," although not completely developed, have many advantages. They "see" the entire organ at one time, take seconds to minutes instead of minutes to hours to perform a procedure, can be used in dynamic function studies, and require smaller amounts of radioactive tracer substances. The main advantage of the camera over the rectilinear scanners lies in its use in dynamic function studies.

Introduction to Radiopharmaceuticals

In employing radioisotopes in diagnostic procedures, the object is to obtain the greatest amount of information with the least possible exposure of the patient to radiation. This goal is achieved by using either radioisotope compounds with rapid radioactive decay (short physical half-life) or those excreted rapidly from the body (short biological half-life). Also, since only gamma emissions of a nuclide are used with external counting systems, radionuclides without additional beta radiation (limited range in tissue) are preferred. Beta rays increase the exposure, but cannot be counted externally and therefore do not add useful information. The best radionuclide is that with a monoenergetic gamma emission which can be efficiently collimated.

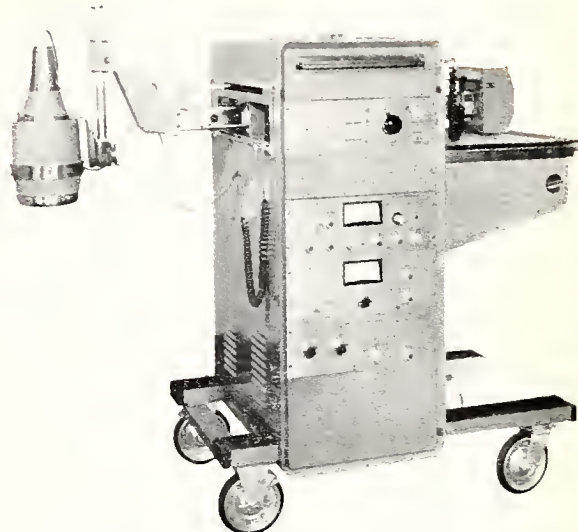


Fig. 2. Picture of the commercially available Picker Magnascanner (5 inch crystal).

In most cases there are a number of different types of compounds which can give similar scans of a specific organ. The mechanisms of localization are numerous¹:

1. Active transport (example, thyroid scanning with iodide).
2. Phagocytosis (example, liver scanning with colloidal gold).
3. Cell sequestration (example, spleen scanning with heat-damaged red blood cells).
4. Capillary blockage (example, lung scanning with macroaggregated albumin).

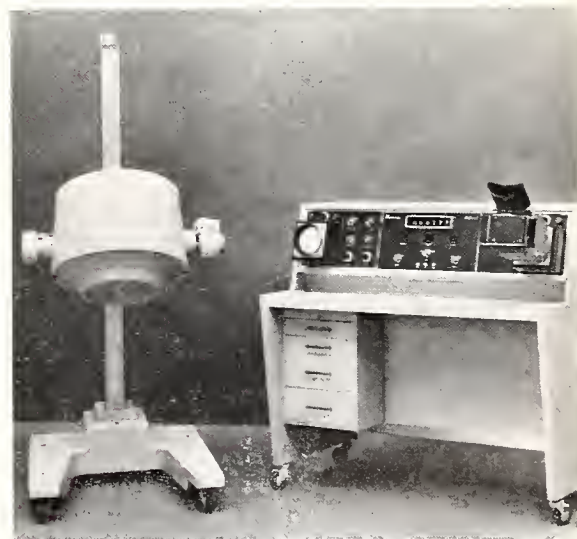


Fig. 3. Picture of the Nuclear Chicago Scintillation Camera.

5. Simple or exchanged diffusion (example, bone scanning with strontium-85).
6. Compartmental localization (example, cardiac scanning with tagged human serum albumin).

In many instances, multiple scans employing different mechanisms can be used to visualize the same organ and obtain different information, such as liver scanning with both radioactive colloidal gold (architectural) and radioiodinated rose-bengal (functional).

In general, two types of scans are obtained. The first type is that in which the administered tagged compound localizes in the abnormal area and appears as a "hot" spot (examples, brain scanning and bone scanning). The second type is that in which the scanning agent localizes in the normal tissue of an organ or organ system, the abnormal areas appearing as "cold" spots (examples, liver and thyroid scanning).

In all diagnostic scans the radiation received by the patient is in the range of diagnostic x-ray studies, but investigation is under way to find newer radiocompounds to further decrease the exposure.

Conclusion

The development of rectilinear scanners and radioisotope "cameras" as well as the production of better radiopharmaceuticals has opened a new field in the use of radioisotopes in diagnostic medicine. It is hoped that this series of articles can provide a brief introduction to help the clinician determine the usefulness of these procedures in his practice.

Reference

1. Wagner, H. N., Jr.: Pharmacological Principles in the Development of Radiopharmaceuticals for Radioisotope Scanning, in Quinn, J. L., III (ed). Scintillation Scanning in Clinical Medicine, Philadelphia, W. B. Sanders Company, 1964.

Mead Johnson Recalls All Eight-Ounce Enfamil Nursette

Mead Johnson Laboratories is recalling all eight-ounce Enfamil Nursette, it has been announced by D. Mead Johnson, company president. "We wish to emphasize that 4 and 6-ounce sizes of Nursette are not affected by this recall. No other liquid or powder forms of Enfamil are involved in this action," Johnson said.

EARLY MEDICAL PRACTITIONERS IN GASTON COUNTY

CARL W. HOFFMAN

The earliest medical practitioners in Gaston County, North Carolina, were likely the Catawba Indians—the first known inhabitants of the area. A hardy, intelligent people, the Catawbias occupied a large section of the state's flat, tree-covered Piedmont, between 1700 and 1760.¹ They camped mainly between the large South Fork and Catawba rivers, the latter of which was named for their tribe. The rivers provided good fishing grounds, a convenient mode of transportation in canoes, and water in which to bathe and refresh themselves and wash their cooking utensils.

With food easily obtainable in abundance, a favorite climate, and a plentiful supply of wood for shelter and fire, the Catawbias had time for recreation and invention. They became resourceful in taking care of themselves and in developing ingenious means to ward off disease and mend broken bodies.

Indians and Traders

A curious turn of mind made the Indians friends of the white traders who began traveling down the Virginia Trading Path from settlements in Virginia in early 1700. One trader wrote in his journal that he was saved by an old chief named Old New River, who sucked poison from a rattlesnake bite on his arm. The trader wrote that the chief "got mighty sick,"² but had great praise for his method.

The traders and the Indians established the rapport which comes when people of differing backgrounds learn and benefit from each other. The traders brought the Indians many strange and wonderful things in trade for the rich furs and foods of the tribe, and also brought bad things, including smallpox.

The Catawbias fought the inevitable epidemic with typical ingenuity. Persons hit by the febrile disease were placed in ovens in an obvious attempt to burn away the pustular eruptions characteristic of small-

Request for reprints to 929 West Fifth Street, Winston-Salem, N. C. 27101.

pox. Afterward the patient was doused in a cool stream. But this method, which possibly had been effective in preventing infections in wounds, failed to stop the raging epidemic. The woods reeked with the stench of death, a trader wrote in 1759.² The disease killed virtually all the Indians who stayed in the area.

While the epidemic raged, a brave young German moved to Gaston County from Pennsylvania, built a crude log cabin, survived the pestilence, and became the first white man to settle in the area. Others followed Bostian Best's example, coming mainly from Pennsylvania and Virginia. Best had hoped that a physician would be among his new neighbors, but none came.

Babies were delivered by women who came to be called midwives. The midwives also occasionally tried their hand at attending the ill, but the majority realized their inadequacy and limited themselves to offering tender, loving care.

The First Physicians

John Newman Oglethorpe was probably the first physician to migrate into the area. He practiced in what is now Mecklenburg County in 1746³ or 1764.⁴ Records, however, do little but establish his presence in the region.

Other records dated during Dr. Oglethorpe's time note that a Dr. Corzen received two shillings for treating a slave from the settlement of Dellinger, located in what is now Lincoln County, and that a Dr. Kennedy was the first "regularly educated" physician. Mention is made of a Dr. Felix Pitt, who charged a patient 15 shillings for a "large plaster," 17 1/2 shillings for "seven aperient powders," and 1 pound 2 1/2 shillings for a "pectoral mixture."⁵

The Gaston County settlers took advantage of physicians who had chosen to migrate to nearby areas earlier, possibly to avoid the vestiges of the smallpox epidemic which had wiped out the Catawbas, but for the most part, the settlers were forced to care for their own injuries and diseases.⁵

These physicians-unto-themselves used crudely made "splints, bandages, and slip-

pery-elm poultices" in treatment. Remedies of the day included a liquid obtained from boiling red oak bark for sore throat, and a potion concocted from burdock bark, wild cherry limbs, and bristly ash roots for regulation of the menstrual cycle. Yellow root was chewed for diarrhea, and catnip tea was taken for hives. Many of these remedies are still used today.⁶

Dr. Isaac Alexander used an effective curative of the day during a smallpox epidemic which swept what is now Mecklenburg County in 1700: He vaccinated patients with scabs. He charged one pound for this treatment—relatively little for saving a person from certain death.

While physicians like Dr. Alexander were growing more sophisticated in their science, so were the midwives, such as Mary Sheffield Dunn and Elija Costner, who typify this genre. Grandmother Dunn, as she was affectionately called, lived and worked in what is now Anson County, near Gaston. She often rode on horseback as far as 60 miles to attend an expectant mother or care for the sick.⁷ She was widely known for her "natural knack" for mixing herbs into effective medicines. Grandmother Dunn died at 101 years of age, just before the Civil War began.

Elija Costner, who lived in what is now Gaston County, wrote in her journal of often having to "get out of bed, saddle her horse, and gallop away into the night" when called by neighbors needing emergency care.⁸ She lived until 1917, dying at the age of 77.

Although the effectiveness of midwives in restoring persons to health is questionable, many pioneers expressed great confidence in them in journals, writing that they preferred a midwife to a physician in most cases—a comment which possibly reveals something about the caliber of physicians of the time.

Dr. William McLean

Probably the most famous of the early physicians in Gaston County—or better, the earliest educated—was Dr. William McLean.¹ Dr. McLean's parents, Alexander and Elizabeth, were Scotch-Irish immigrants who had moved from their first American home

in Pennsylvania to Rowan County, where William was born in April 2, 1757. Shortly afterward, they moved from Rowan to what is now Gaston County, where William was placed under a tutor at an early age. A scholarly child, he was advised by his tutor to take up studies at Queen's Museum, one of the best schools of the day, located at Charlotte. William followed that advice, and while at Queen's Museum he decided to study medicine.

On completion of two years at the Charlotte school, he was offered the position of Surgeon's Mate in the Continental Army, which had been organized to break Great Britain's yoke on the mushrooming American colonies. William accepted the position, gaining valuable experience in treating men, many of whom were his neighbors, at the Battle of Kings Mountain and later, as a physician, under General Green's command at Camden.

After the war William completed medical studies at a school in Philadelphia, receiving a diploma in 1787. He returned to the Gaston area on graduation and began his practice. In 1792 he married Mary Davidson, who bore him ten children. A son, John, was to become the second physician in the McLean family.

Popular with patients, William was described in journals of the day* as "... unusually handsome . . . six feet tall, straight, and of the most polished manners." In 1814 this popularity won him election to the State Senate where he served ably, originating a project to restore the battleground at King's Mountain and erecting a monument there at his own expense. Dr. McLean died Oct. 25, 1828, and was buried in the Bethel churchyard in York County, South Carolina.

Another important physician of this period was Dr. J. C. Rudisell. An acquaintance of Dr. McLean's and also a native of Gaston County, Dr. Rudisell moved to Lincolnton after marriage to Amanda Alexander in 1792. Records about his practice are spotty.

Self-taught Physicians

Most of the early physicians were not as

fortunate as Dr. McLean in obtaining formal education. They taught themselves, studied under practicing physicians, or learned by experience. Dr. Isaac Wilson, a clever physician who kept extensive records of his practice, typifies the self-taught medical practitioner of the day. He wrote that, in addition to studying medicine on his own, he "studied under Dr. D. T. Caldwell," asking his counsel and discussing medical theory with him.

Dr. Wilson built up one of the largest practices of the day, serving families throughout what is now the Mecklenburg and Gaston area. His methods of practice were similar in many respects to those of today.

He traveled by horse, bearing a pair of oversized saddlebags which contained, among other things, a "cupping horn." The horn was fashioned from the horn of a young heifer, scraped so thin that blood could be seen inside. The small end of the horn was plugged with wax punctured by a pin.

This weirdly fashioned medical instrument was used for bleeding patients. The large opening of the horn was placed against the skin and air was sucked from the small opening. A small plug of wax was then inserted in the hole with the teeth, sealing the horn and creating a partial vacuum.

Dr. Wilson often bled his patients, as did most of his contemporaries, until the mid-1800s. Bleeding, combined with the use of such herbs as the Peruvian plant to "stop chills," and a native plant called "grow round," of which Dr. Wilson carried an ample supply in his saddlebags, was believed to be the ultimate in health measures of the day. Dr. Wilson recorded that he also became justice of the peace in the area, performing many marriage ceremonies.

Not all physicians in the early days of Gaston County kept as detailed records of their practice as did Dr. Wilson. Between the year 1800 to 1860 apparently no physicians left journals.¹ (p 77) Two physicians, Dr. Sidney X. Johnston and Dr. Lee A. Moore, left spotty records dating practice in Dallas, a small town in Gaston County, about 1860. Dr. Johnston wrote that he also

*Reference 1 (pp 28, 34, 40, 55, 59), 2 (pp 122-127)

was a delegate to the convention for secession from the Union.⁹

Robert Harris Adams came to Gastonia in 1875, after graduating from the Louisville Medical College. A native of York County, South Carolina, he was Gastonia's first resident physician, serving a total population of 500.⁹ Two of his contemporaries were Drs. W. W. Latham and James Abernathy. Dr. Latham served as mayor of Dallas in 1877, 1 (pp 107, 111, 132) and Dr. Abernathy practiced first at Mount Holly⁹ and later that year joined Dr. Latham and a Dr. William Slown.¹ Neither Dr. Abernathy nor Dr. Slown left journals, and Dr. Latham left only spotty records, mostly of his political life.⁹

The Gaston County Medical Society

As physicians became less rare in Gaston County, the inevitable happened: they formed an organization. The significant event occurred on September 5, 1887, in the office of Dr. J. H. Jenkins at Dallas.

On that day the "prominent" physicians in the county, nine strong, organized the county's first medical society, to bring about "uniformity in charges and treatments, and to foster the "brotherly feeling that characterizes men engaged in so honorable and responsible a calling as the practice of medicine."¹⁰

Charter members were E. B. Holland, I. Blair Hunter, John H. Jenkins, W. W. Davis, Howard Reedy, William H. Wilson, J. P. Lattimore, W. B. Henderson, and H. M. Eddleman. Officers were Dr. Holland, president; Dr. Hunter, vice-president; and Dr. Jenkins, secretary-treasurer.

The society met on the first Monday of each month. It adopted a constitution, a "Fee Bill of the Old York District Medical Society," and a name—the Gaston County Medical and Surgical Society. The word "Surgical" was latter dropped. The society's code of ethics included vows to report to members of the society the names of any persons who, though able, refused to pay their medical bills, and to refuse to visit or prescribe medicines for such persons or members of their families until they had paid their bills.

Medical Luminaries

Dr. Holland, the first president of the society, is reported as the first native of Gaston County to receive the degree of Doctor of Medicine.^{1, 10} (p 191) He was graduated from the National Medical College in Washington, D. C., and served as surgeon in the army hospital at Raleigh from 1861 to 1865. He then built an office beside his home, formerly called the Farmer's Hotel, at Dallas, and practiced in the area for many years.¹¹

It was not the highly educated Dr. Holland, however, who performed the most storied feat in the early history of Gaston County. Dr. John Jenkins, according to local residents, won this distinction. During the typhoid epidemic of 1894, Tommy Henderson, a clerk in J. R. Lewis's general store, grew violently ill. Standard medical treatment of the day failed to sustain him. Dr. Jenkins attempted a transfusion, not of human but of lamb's blood. "Unthinkable!" his comrades muttered. But it worked. Records tell that Henderson grew stronger during the transfusion, while the lamb grew weaker and finally died. Henderson is said to have recovered rapidly, suffering no ill effects and living for four years before being struck down by pneumonia. 1 (pp 135-136)12

As the public's imagination centered more and more on the feats of physicians, advertising found its place among those who felt the pangs of competition most severely. A magazine of Gaston College carried this typical advertisement of the day: "Wm. H. Wilson, M.D., physician and Surgeon, Office in Wilson and Co.'s Drug Store. All calls promptly attended to." And below it: "Wm. H. Wilson and Co., Drugists and Confectioners, and dealers in paints, oils. . . Fine Cigars a specialty."¹³

Although physicians were making strides in their science, their abilities and talents could not save their fellow, Dr. William Bain Henderson, a native of the county, a charter member of the society, and a product of Davidson College. Five years after graduation from the University of Maryland Medical School, he died of typhoid fever while engaged in a large practice in Mount Holly.¹⁴

Gaston's first woman physician, although as well educated as her male counterparts, was looked upon by residents as a combination midwife-physician. The popular physician was known as "Dr. Bess," short for Dr. Bessie Violet Puett. Born in Dallas on December 30, 1884, she was graduated from Gaston College in 1902 and from the Woman's Medical College at Baltimore in 1907. In 1909 she began practice in her home town and was described by residents as a petite, attractive woman who had the greatest concern for her patients. In 1918 she married a Presbyterian minister, the Rev. D. L. Jones, and occupied all her time as a wife and later a mother.¹⁵

Conclusion

The early 20th century saw great medical progress in medical practice in the county, reflective of the progress being made throughout the country. Soon the past conflicted with the present as black does with white, and the medical practitioner of Gaston County began to look on his predecessors as we might do today—with gentle humor but also a healthy respect. For there had to

be a beginning, and who can say that the beginning was not good.

References

1. Cope, R. F., and Wellman, M. W.: *The County of Gaston, Charlotte, N. C.*, Heritage Printers, Inc., 1961, pp 8-19.
2. Puett, M. S.: *History of Gaston County, Charlotte, N. C.*, The Observer Printing House, Inc., 1939.
3. Strong, C. M.: *History of Mecklenburg County Medicine, Charlotte, N. C.*, News Printing House, 1929, pp 13-15.
4. Tompkins, D. A.: *History of Mecklenburg County and the City of Charlotte*, Observer Printing House, Charlotte, N. C., 1903.
5. Draper, L. C.: *King's Mountain and Its Heroes*, Marietta, Ga., Continental Book Co., 1954, p 306.
6. Family records.
7. Hastings, C. I.: *Our Mecklenburg Heritage*, Compiled by Charlotte Ivey Hastings, 1955.
8. Hoffman, A. W.: Personal communication.
9. Sherrill, W. L.: *Annals of Lincoln County, North Carolina, Charlotte, N. C.*, Observer Printing House, Inc., 1937, p 50.
10. Separk, J. H.: (ed): *Gastonia and Gaston County, North Carolina*, Gastonia, 1949, pp 132, 135.
11. (a) *The Gastonia Daily Gazette*, vol 41, 1940 (date unavailable). (b) vol 67, Oct 5, 1946.
12. Saul, D. (ed): *The Gaston County Historical Bulletin*, vol 3 (April, May, June) 1957, p 1.
13. *The College Student, Dallas, N. C.* vol I (May) 1886.
14. *Transactions of the Medical Society of the State of North Carolina*, 1887, p 33.
15. Craig, W. R. (ed): *The Gaston County Historical Bulletin* 9: 1-3, 1963.

Weak nerves are the constant companions of inactivity. Nothing but exercise and open air can brace and strengthen the nerves, or prevent the endless train of diseases which proceed from a relaxed state of these organs. We seldom hear the active or labourious complain of nervous diseases; these are reserved for the sons of ease and affluence. Many have been completely cured of these disorders by being reduced from a state of opulence, to labour for their daily bread. This plainly points out the sources from whence nervous diseases flow, and the means by which they can be prevented.—William Buchan: *Domestic Medicine, or a Treatise on the Prevention and Cure of Diseases by Regimen and Simple Medicines*, etc., Philadelphia, Richard Folwell, 1799, p 73.

North Carolina Medical Journal

Owned and published by
The Medical Society of the State of North Carolina,
under the direction of its Editorial Board.

Wingate Memory Johnson, M.D.
Founding Editor (1940-1963)

EDITORIAL BOARD

Robert W. Prichard, M.D., Winston-Salem
EDITOR

John S. Rhodes, M.D., Raleigh
ASSOCIATE EDITOR

Miss Louise MacMillan, Winston-Salem
ASSISTANT EDITOR

Mr. James T. Barnes, Raleigh
BUSINESS MANAGER

W. McN. Nicholson, M.D., Durham
CHAIRMAN

Ernest W. Furgurson, M.D., Plymouth

John C. Reece, M.D., Morganton

Robert A. Ross, M.D., Chapel Hill

Charles W. Styron, M.D., Raleigh

Address manuscripts and communications regarding
editorial matter to the

NORTH CAROLINA MEDICAL JOURNAL

300 South Hawthorne Road, Winston-Salem, N. C. 27103

Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 203 Capital Club Building, Raleigh, N. C. 27602. All advertisements are accepted subject to the approval of a screening committee of the State Journal Advertising Bureau, 510 North Dearborn Street, Chicago, Illinois 60610, and-or by a Committee of the Editorial Board of the North Carolina Medical Journal in respect to strictly local advertising accepted for appearance in the North Carolina Medical Journal.

Instructions to authors appear in the January and July issues.

Annual Subscription, \$5.00 Single copies, \$1.00
Publication office, Progress Printing Co., Inc., Box 175,
Fuquay-Varina, North Carolina 27526.

JUNE, 1967

THE ONE HUNDRED THIRTEENTH ANNUAL MEETING

On Saturday, near the end of the eleventh hour except for luncheon recess, Dr. Frank Jones rang down the curtain on his final Council Session as presiding officer. This ended a year of unusual activity requiring not only the regular quarterly meetings, but special sessions as well, to establish policies and modus operandi to resolve issues arising from Medicare, Regional Health Centers, payment for medical service, and the proposed headquarters facility.

At long last, the return to Pinehurst be-

came reality, marred somewhat by unseasonable weather. Member registration fell short of the expected one thousand.

Six hundred forty-four member physicians were on hand, augmented by 31 physician guests and 98 member of SAMA. Auxiliary registration was 250. The cool, wet weather likely precipitated one hundred hotel reservation cancellations on Monday and depressed attendance at the well ventilated scientific exhibits on the curtained veranda.

A new two-story facility housed technical exhibits and provided comfortable quarters for meetings of the House of Delegates and scientific sessions. A full house present at the distribution of prizes just before adjournment indicated good attendance at the technical exhibits.

The House of Delegates functioned smoothly due in large part to the effective work of two reference committees to which 19 items were referred for study and recommendation. The item creating most controversy revolved around the question of establishing District responsibility in the designation of Councilors. Proposals to limit the terms of Councilors and to provide for District participation in selection of Councilors will require ratification next year.

A change in the Constitution transferring the election of the Editorial Board of the JOURNAL from the General Session to the House of Delegates was ratified. The Committee on Constitution and By-Laws recommended a similar transfer of the election of the Board of Medical Examiners from the General Session to the House of Delegates. If this provision is ratified at the 1968 meeting, all elective officers of the Society will become the responsibility of the House of Delegates.

Action having portent for the future of the Medical Society was authorization of two "blue ribbon" committees, the first having six members appointed by the President to study the total program of the Medical Society, and the second, a long-range planning committee, composed of the ten most recent past-presidents, to establish a design for the future course of the Society.

Purchase of property in Raleigh for a Headquarters Facility was approved and authority to proceed with tentative plans for constructing a building was given to the Committee on Headquarters Facility. Other new budgetary items approved were a full-time secretary in the Headquarters office to serve the Auxiliary, an allowance for secretarial assistance in the President's office, and payment of actual expenses incurred by delegates and alternate delegates to the meetings of the A.M.A. House of Delegates.

The President's Banquet marked the transfer of the mantle of office from Dr. Frank Jones to Dr. Robert A. "Daddy" Ross. Thus closed a year of imaginative and methodical leadership confronting every issue and evading none, and thus, also, began a year with a President possessing remarkable capacity for understanding, inspiration and good humor at the helm of the Society.

J.S.R.

* * *

DECIBELIC POLLUTION

Mention of atmospheric pollution immediately stirs up thoughts of flying particles and noxious vapors, as we and our filler contributor, Dr. Buchan, have been remarking these past few months. It might be pointed out that the air is also befouled by noise in a great many locations, and while there are voices crying out about the problem, one can barely hear them.

Studies of certain isolated peoples have related an absence of environmental noise with greater longevity, and with better preservation of hearing in old age than that enjoyed in "civilized" areas. The direct effects of noise energy on people employed around major noise sources such as jet engines have been quite well documented. Less easy to document is the wear and tear of a minor sort that occurs each day from unnecessary door slamming, radio playing, motorcycle "gunning," horn blowing, argumentation, and so on. The side effects of some people's speech are related not only to what they say but to the quality and loudness of their voices. Nowhere is the wearying effect of babble and clamor more in evidence

than at cocktail parties, where there is a direct relation between beverage consumption and sound energy abroad in the room, to the point where sober observers just arriving on the scene would like to put everyone's brown bag over his head and send him packing.

One sensitive to noise might be able to hold on for a while longer, thinking that our environmental health program will shortly come to the rescue. But the signs are bad. A recent note in the medical press describes an architect's solution to the problem of aural privacy in adjacent examining rooms. Rather than build expensive sound-resistant partitions, the building will have a "white noise" system—a sort of hissing sound introduced into each room by loudspeakers—which obscures background noise so it is unintelligible. Noise begetting more noise, until we all go deaf as nature's last resort.

* * *

UTILIZATION REVIEW

Elsewhere in this issue appears a detailed description of a methodology, some of the burdens, and the limited blessings which may be derived from the Utilization Review Program which has been inflicted upon us in the hospital practice of medicine as a concomitant of the Medicare legislation. As we bow beneath the bureaucratic boot, we in medicine may derive some somber solace from the thought that some benefit, some truly useful lesson may be found in the horrendous morass of red tape and paper work with which the encroachment of the federal government into the practice of medicine is submerging us.

Here in a medical school teaching center, a year's experience with the Utilization Review Program has made it clear that if overzealous attention to the infinite detail possible in such a program is avoided, and if at the same time truly conscientious, thoughtful pursuit of its purposes by the Utilization Committee and subcommittee members is observed in an atmosphere of cooperation by the entire hospital staff, an infinitely more efficient use of hospital facilities and beds must certainly result. The

awareness that our practices in the use of hospital beds so greatly needed by others on the staff will be watched by our fellow physicians must make us all more thoughtful in our use of these beds, and must make us pursue a little more vigilantly the quickest and most efficient implementation of diagnostic and therapeutic measures necessary for getting patients out of these much needed beds.

The historical aspects of utilization review, which let us see how our various services relate to national averages for similar services, and how we as individuals measure up to our fellows engaged in similar practice, must be illuminating and lead to considerable soul-searching in all of us, whether these comparisons point out apparently greater or lesser efficiency in the use of hospital facilities in the care of our patients.

As the avalanche of paper work threatens to engulf us, while government invasion of the practice of medicine grows faster than we care to contemplate, let us at least nurture any small benefits which show themselves in this dreary aspect of the changing face of medicine. Certainly in the Utilization Review Program such rays of light can be perceived.

WINSTON ROBERTS, M.D.

* * *

INNARD EXPLORATION

Finding out what is going on inside the body without making additional holes has long been one of the aims of physicians. It is not really very long ago since the stethoscope and the rediscovery of percussion led to major advances in diagnosis, and quite recently that x-ray studies made even more dramatic contributions to that end. Despite these historical developments known to all physicians, many contemporary practitioners may not be aware of the latest major advance on the secrets of the insides—the development of “scanning” procedures.

To make sure our readers are abreast of scanning developments (and it is impressive to note how much of this service is available all over our state) we begin, in this issue of the JOURNAL a series of articles by Dr. Maynard, written with a general audience in mind. Son of a mother who taught in a mission school, Dr. Maynard retained enough of his childhood orientation to be willing to undertake this task, for which we thank him.

* * *

RECOGNITION FOR SERVICE

A North Carolina physician, the first pilot examiner appointed in this state by the Federal Aviation Agency, has received a citation for 40 years of service. Dr. V. M. Hicks, Sr., Raleigh ophthalmologist, was recently cited by the agency for his “Invaluable service as an aviation medical examiner who during the past 40 years not only has helped to assure the physical and mental fitness of the nation’s pilots, but also has contributed immeasurably to increased public understanding of the importance of American Civil Aviation. His distinguished public service on behalf of flight safety warrants the admiration and gratitude of his colleagues in the aviation community.” In addition to examination of applicants for pilot licenses, Dr. Hicks has had the responsibility of investigating and determining possible pilot failure in air accidents.

Dr. Hicks’ public service has not been limited to his duties with the Federal Aviation Agency. He has been consulting ophthalmologist to the North Carolina State Commission for the Blind since it was established, and is ophthalmologist for the North Carolina State Schools for the Blind.

With his confidence in the future potential of aviation, Dr. Hicks can view his role in the past progress of air travel with much satisfaction.

J. S. R.

Committees & Organizations

NORTH CAROLINA STATE BOARD OF HEALTH

PUBLIC HEALTH STATISTICS SECTION

DIVISION OF EPIDEMIOLOGY

CURRENT TRENDS IN VITAL STATISTICS

GLENN A. FLINCHUM, B.S.*

The collection, tabulation, and publication of vital statistics is one of the oldest activities of the State Board of Health, having begun on a limited basis as early as 1881, when a law was passed requiring registration of births and deaths at the time of the annual tax listing. It was not until 1913, however, that an effective statewide law was passed requiring the registration of all births, deaths, and fetal deaths (stillbirths) at the time and place of the occurrence. In addition to serving the needs of the individuals concerned, these records have, through the years, furnished a means of measuring changing trends and the characteristics of the population they represent. Statistical data from vital records are used extensively by research workers, medical schools, and many health organizations in studying specific health problems and identifying areas of greatest need. However, since much of the information contained on these records is of a personal and confidential nature, a strict policy must be maintained concerning the release of names, addresses, or any other information which would identify individuals.

Live Births

The registration of each live birth is the responsibility of the attending physician or midwife. In most counties, the certificates are routed through the local health departments to the State Board of Health for processing and permanent preservation. Approximately 95% of our births now occur in hospitals, and 97% are attended by a physician. One of the most significant trends

now apparent is the decline in the birth rate, indicating that the "baby boom" which followed World War II has come to an end. Resident live births declined 7.9% in 1965 and preliminary figures for 1966 show a continued drop of at least 4.5%. Since 1961, a peak year, the number has dropped 16%.

This decline in the birth rate is a nationwide occurrence. Provisional statistics released by the Department of Health, Education, and Welfare show for January-November 1966 a decline of 5% for the nation when compared to the same months in 1965.

As the baby boom subsides, what is the outlook for the future? Most experts agree that a future increase in the number of births, if not the rate, is almost inevitable as the large contingent of postwar children reach marriageable age and begin their own families. For the past three years marriages have increased significantly in North Carolina as well as in the nation, thus creating the potential for another upswing in births.

Births out of wedlock continue to increase despite all efforts to combat this problem. In 1961, 9% of the total births were out of wedlock. In 1965 this proportion had risen to 11%. The majority of these births occur among girls under 20 years of age; in fact there were in 1965 a total of 319 illegitimate births to girls under 15 years of age.

Deaths

The registration of deaths is a somewhat more complex task than that of births, since it involves a dual responsibility—that of the attending physician and the funeral director. The promptness with which deaths are certified has improved gradually over the past decade, although some funeral directors still complain of being unable to meet the 72-hour legal deadline for filing death certificates because of delays in obtaining the medical certification from the attending physician. Realizing that the physician frequently needs more time to make a final decision concerning a cause of death, the State Board of Health requested and obtained legislation to permit a "pending" cause to be shown on the original certificate, followed by a supplemental report furnishing

*Chief, Public Health Statistics Section, North Carolina State Board of Health.

Request for reprints to P. O. Box 2091, Raleigh, N. C.

the complete cause when it becomes available. In any event, the many uses now being made of death certificates (insurance, settling estates, etc.) make it imperative that the original certificate be filed as promptly as possible.

The death rate continues to rise gradually each year, due primarily to the aging of the population (that is, the increasing proportion of persons in the older age groups). Heart disease has been the leading cause of death since 1930, accounting for more than one-third of all deaths. Cancer deaths, the second leading cause, are increasing each year. Other causes which last year took an increasingly larger toll among the population under 65 were motor vehicle accidents (1,757), other accidents (1,521), suicides (504), and homicides (510). When combined, these last four causes total 4,292 deaths, which is almost 10 per cent of the total recorded deaths.

There was a slight decline last year in infant deaths in the neonatal period (under 28 days); death rates among infants from 28 days to one year remained about the same. Each year nearly 1,000 infants 28 days old

and over are lost, many of the deaths due to supposedly preventable causes, such as accidents.

The problem of fetal mortality has been receiving considerable attention from medical groups in recent years. The A.M.A. Committee on Maternal and Child Care has helped to stimulate interest in this problem through national and regional conferences and other means. Present knowledge of the total extent of the fetal mortality problem in this country is very limited, owing to lack of registration completeness, lack of uniformity in reporting requirements among the states, and other reasons.

North Carolina requires the reporting of all fetal deaths of 20 weeks' gestation and over. The person who disposes of the fetus (funeral director, hospital, or family) is responsible for filing the fetal death certificate, with the attending physician being responsible for certifying to the cause of the fetal death. Last year a total of 1,710 fetal deaths of 20 weeks' gestation and over were reported. In studying the entire problem of perinatal mortality, there is an apparent need for more complete data as to prenatal

SELECTED VITAL STATISTICS DATA: NORTH CAROLINA. 1961-1966

	1966*		1965		1964		1963		1962		1961	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Total Live Births	93,243	19.2	97,656	20.3	106,061	22.3	107,322	22.8	109,549	23.5	111,721	24.2
Births out of Wedlock	10,798	11.6	10,970	11.2	11,141	10.5	10,666	9.9	10,595	9.7	10,438	9.3
Deaths	42,397	8.7	41,661	8.7	40,441	8.5	40,529	8.6	39,041	8.4	37,443	8.1
Fetal Deaths	1,711	18.3	1,713	17.5	1,937	18.3	1,928	18.0	1,998	18.2	2,186	19.6
Neonatal Deaths												
(under 28 days)	1,735	18.6	1,950	20.0	2,109	19.9	2,134	19.9	2,150	19.6	2,266	20.3
Postneonatal Deaths												
(28 days—1 year)	967	10.6	1,022	10.7	1,098	10.6	1,208	11.5	1,174	10.9	1,142	10.4
Selected Causes of Death:												
Heart Disease	15,496	318.5	15,130	314.2	14,562	305.5	14,478	306.9	14,048	301.0	13,277	287.5
Malignant Neoplasms	5,656	116.3	5,496	114.1	5,378	112.8	5,051	107.1	5,008	107.3	4,607	99.8
Intracranial Vascular												
Lesions	5,319	109.3	5,429	112.7	5,123	107.5	5,228	110.8	5,158	110.5	5,004	108.4
Motor Vehicle Accidents	1,757	36.1	1,629	33.8	1,630	34.2	1,411	29.9	1,332	28.5	1,319	28.6
All Other Accidents	1,521	31.3	1,553	32.2	1,463	30.7	1,380	29.3	1,358	29.1	1,312	28.4
Suicides	504	10.4	474	9.8	453	9.5	498	10.6	486	10.4	449	9.7
Homicides	510	10.5	483	10.0	448	9.4	418	8.9	409	8.8	396	8.6

*Provisional figures subject to change.

Rates are computed as follows:

Live birth and death rates are per 1,000 estimated population.

Births out of wedlock are per 100 total live births.

Fetal and neonatal rates are per 1,000 live births.

Postneonatal rates are per 1,000 survivors.

Selected cause of death rates are per 100,000 estimated population.

conditions, complications of labor, and other significant factors which can affect the outcome of pregnancy.

On analyzing vital statistics, it becomes apparent that the subject is not nearly so dry as might be imagined. These data clearly reflect the changes which are taking place in medicine and public health—the conquering of old problems and the emergence of new ones. The physician who, in spite of a busy schedule, takes time to accurately and conscientiously complete a birth or death record, can take satisfaction from the fact that he is contributing to the overall body of knowledge which is essential to continued progress.

Bulletin Board

Coming Meetings

Duke Medical Postgraduate Course—Atlantis Lodge, Atlantic Beach, July 10-15.

Sixth Annual Southwide Lawyers and Physicians Conference—Lake Junaluska, August 9-11.

Seventh Annual Charlotte Postgraduate Seminar—Presbyterian Hospital, Charlotte, September 27-28.

Fifth District Medical Society Meeting—Country Club of North Carolina, Pinehurst, October 11.

American Urological Association and Southeastern Section Postgraduate Seminar—Jack Tar Hotel, Durham, November 5-8.

NEWS NOTES FROM THE DUKE UNIVERSITY MEDICAL CENTER

Dr. James B. Wyngaarden, an internationally known internist who is also a biochemist of some distinction, has been appointed chairman of the Department of Medicine and first Frederick M. Hanes Professor of Medicine at Duke University Medical Center.

Dr. Wyngaarden now is professor and chairman of the Department of Medicine at the University of Pennsylvania School of Medicine, Philadelphia. Before accepting that position in 1965, he was a professor of medicine and an associate professor of biochemistry on the Duke staff.

Dr. Wyngaarden will succeed Dr. Eugene A. Stead, Jr. Dr. Stead, who will relinquish the chairmanship at his own request, has built a department of internal medicine that is generally recognized as one of the finest in the country. He will continue as the Florence McAllister Professor of Medicine and in this capacity will devote full-time to his teaching and clinical activities.

The new Hanes chair in medicine at Duke was created by the John Wesley Hanes and Anna Hodgkin

Hanes Foundation in honor of the late Dr. Frederick M. Hanes. Starting at Duke as a professor of neurology in 1930, Dr. Hanes later became chairman of the Department of Medicine and was succeeded by Dr. Stead.

A recognized expert on inherited biochemical defects, Dr. Wyngaarden has achieved a distinguished reputation by his research on a multitude of diseases. He collaborated with Dr. R. Wayne Rundles of Duke in the development of allopurinol, the most successful drug found so far for the treatment of gout, a majorcrippler. He is perhaps best known, however, as co-author of the book, "The Metabolic Basis of Inherited Diseases."

* * *

The unveiling and presentation of an original oil painting of Duke University School of Medicine was made to Dr. Wilburt C. Davison, dean emeritus of the school, recently.

The presentation by E. R. Squibb & Sons, Inc., is part of a long-range plan by the pharmaceutical firm to create a collection of original oil paintings of the medical colleges of the United States.

The presentation was made during a luncheon at the Statler-Hilton Inn in Durham. Participating, in addition to many citizens of prominence in education, government and medicine, were: Dr. Douglas M. Knight, president of Duke University; Dr. William G. Anlyan, dean of the Duke University School of Medicine; and Edmund R. Beckwith, Jr. president of Squibb Pharmaceutical Company, a division of E. R. Squibb & Sons, Inc.

* * *

Dr. Ewald W. Busse, Gibbons Professor of Psychiatry and Chairman of the Department of Psychiatry at Duke University Medical Center, has been named winner of the fourth annual Institute of the Pennsylvania Hospital Award for his special and unique contributions to the psychiatric care and treatment of the aged.

Announcement of the award winner was made in Detroit recently, at the annual meeting of the American Psychiatric Association. It consists of a certificate and a \$1,000 cash prize that will be presented to Dr. Busse at a special meeting in his honor on October 9, 1967.

The ward, created in 1963 to honor the memory of Edward A. Strecker, M.D., is intended to stimulate therapeutic efforts of young psychiatrists in the field of psychiatric patient care. Dr. Strecker, distinguished psychiatrist, author and educator, started Pennsylvania Hospital's Psychiatric Out-Patient Department, and was also a consultant to the Institute until his death in 1959. He was President of the American Psychiatric Association in 1943.

Dr. Busse, who is director of Duke University's Center Study of Aging, has made outstanding contributions in the field of patient care, particularly by elucidating through research fundamental principles involved in the care of the aged and by helping to educate able young psychiatrists with excellent professional standards and capabilities. In emphasizing psychiatric responsibilities to the aging and aged, he has improved effectiveness of care for a group which has been considerably slighted.

Heart attack victims sometimes suffer complications, including recurrence of the heart attack, when they are moved from one area of a hospital to another, a Duke University research team has found.

Instead of being given the impression they are being "promoted" because of improvement in their condition, the patients experience rejection feelings when the care they have come to depend upon is terminated.

The Duke study was described in a paper presented at a meeting of the American Federation of Clinical Research by one of the researchers, Miss Virginia Kliner, a nurse who specializes in the care of cardiac patients.

The research is part of a long-range study of complications in heart attack victims being conducted by Dr. Robert F. Klein, an assistant professor of medicine. His curiosity was piqued several years ago when he found that heart attack victims may recover from the physical symptoms of their attack and still continue to be invalids.

From the new study, the researchers have concluded that the transfer of the heart attack patient represents a significant psychological and physiological stress, particularly if it implies disruption of the doctor-patient relationships.

"Anxious about the future, and having no ability or willingness to do anything active, the heart attack patient usually lacks a feeling of well-being and becomes dependent upon those who are helping him get well. Dr. Klein pointed out. The transfer to another ward where he receives less attention due to a decreased nurse-patient ratio and less physician attention for the same reason seems to aggravate this feeling.

Also involved in the research were Dr. Andrew Wallace, director of the cardiac unit, and Dr. Douglas Zipes, a fellow in cardiology.

* * *

Scientists who travel to foreign lands to present scientific papers often find themselves cast in the role of unofficial ambassador.

Such was the case last October when Dr. Blaine S. Nashold, a Duke University neurosurgeon, travelled to Budapest, Hungary, to describe new findings in epilepsy research.

A week ago, Dr. Nashold, an associate professor, received a rare medal from the physicians who had invited him abroad—a gesture of gratitude for a man who respects Hungary's contribution to medical science.

Though not an official honor, the medal is a genuine token of the friendship of one group of physicians for a foreign physician.

The medal was struck in 1956 by the Hungarians as a tribute to one of their eminent men of science, Dr. Ignax Semmelweis (1818-1865), an obstetrician who achieved fame for pointing out the cause of a serious illness called child-bed fever and its relationship to unsterile procedures.

* * *

A new Duke University Medical Center laboratory is playing a major role in the war on cancer, being waged on many fronts.

In the short time since it opened, the regional diag-

nostic and treatment facility for victims of a cancer peculiar to pregnant women—trophoblastic neoplasms—has uncovered active disease in 10 out of 45 patients screened.

The laboratory was set up last August on a \$35,738 federal government grant to Dr. Roy Parker, professor and chairman of the Department of Obstetrics and Gynecology.

Trophoblastic neoplasms are moderately rare tumors which run a rapid course ending in death if not treated in time. The facility enables early diagnosis of the tumor through measurement of a hormone called chorionic gonadotrophin which is produced by the tumor and found in the urine, said Dr. C. B. Hammond the director.

The unit provides community physicians throughout the southeastern part of the United States with rapid, accurate tests of gonadotrophin excretion in patients suspected or found to have the tumor.

* * *

The sources and concerns of capital financing of hospitals were discussed at a national forum on hospital and health affairs held at Duke University in May.

About 100 experts from across the country were invited by the forum's sponsor, the Duke Graduate Program in Hospital Administration, to attend.

Financed by the Duke Endowment, the forum is the third of its kind to be held here.

"The rapid growth and changing nature of hospital and medical care is precipitating obsolescence of existing facilities as well as increasing demands for additional facilities," noted Ray E. Brown, director of the Duke Graduate Program in Hospital Administration.

NEWS NOTES FROM THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE

The National Institutes of Health has selected four physicians from the Department of Medicine of the UNC School of Medicine for its coveted Career Development Awards.

These awards pay the complete salaries of the recipients for five years, and each award is renewable for an additional five years.

Selected for these awards on the basis of national competition are: Dr. Ronald C. Abele, 35-year-old dermatologist from Sedalia, Mo.; Dr. John C. Herion, 39-year-old hematologist from Mount Pleasant; Dr. William E. Lassiter, 39-year-old specialist in metabolism from Wilmington; and Dr. Ellis L. Rolett, 36-year-old cardiologist from New York City.

* * *

Dr. H. McLeod Riggins of New York City has been elevated to the presidency of the UNC Medical Alumni Association. He succeeds Dr. John R. Chambliss of Rocky Mount.

Other new officers are Dr. James E. Davis of Durham, president-elect, Dr. William W. McLendon of

Greensboro, vice president, and Dr. G. Reginald Tucker Jr., of Henderson, secretary.

Elected to three-year terms as councilors were Dr. Ernest H. Yelton of Rutherfordton, Dr. Harold L. Godwin of Fayetteville, and Dr. Isaac C. Wright of Raleigh.

* * *

The stuff dreams are made of in special situations was analyzed in Santa Monica, Calif., by a UNC psychologist.

In three papers presented to the Association for the Psychophysiological Study of Sleep, Dr. Robert L. Van de Castle reported on the differences in dream content among psychiatric patients, dream changes among women during pregnancy, and the relationship of dream content to the menstrual cycle among first-year nursing students.

* * *

J. Mario de Leon, chief medical illustrator at the School of Medicine for the last two years, resigned effective June 1 to become a medical illustrator at the Baylor University School of Medicine in Houston, Tex.

He will join the three-man medical communications staff in the Department of Surgery, under the chairmanship of the nationally known heart surgeon, Dr. Michael DeBakey.

* * *

A special training program and two research studies participated in by UNC medical students were explained at Chapel Hill in early April at the 11th annual Medical Parents Day.

Scott Kleiman, a senior medical student from Raleigh, spoke about his senior clerkship at Charlotte Memorial Hospital in Charlotte.

Also on the program were Joe Craver, a senior medical student from Shelby, explaining his research on preserving the tendon-gliding function of the hand, and the report of a student-faculty team which has been studying bleeding and blood clotting. Members of the team are John Johnston of Charlotte and Theodore Kiesselbach of Media, Pa., both rising juniors at the medical school, and Dr. Harld Roberts and Dr. Kenneth Brinkhous of the Department of Pathology.

* * *

Emmett Kelly Jr., the silent clown of circus and World's Fair fame, visited children at N. C. Memorial Hospital here in mid-April. He spent an hour and a half in the hospital playroom and at the children's bedsides during the morning.

Kelly Jr. is the son of perhaps the best-known clown of all time—the famed, sad-faced circus clown remembered for his baggy blue pants, wrinkled green shirt, and 6 x 13-inch shoes.

* * *

Members of this year's graduating class at the UNC School of Medicine have received one-year internship appointments to hospitals in 16 states and the District of Columbia.

The 74-member Class of 1967 is the largest graduating class in the school's history. The largest class

previously was in 1960, when 69 medical degrees were awarded.

The widely diversified types of internships obtained for this year's graduates reflect broad career interests in both the medical specialties and family practice.

* * *

The U. S. Public Health Service has appointed Dr. Robert R. Huntley of the School of Medicine to a four-year term on its Health Services Research Study Section in the Bureau of Health Services.

* * *

Three UNC medical scientists presented research reports at three national meetings in Atlantic City recently.

Dr. Joseph Renn, now on duty with the Navy in Pensacola, Fla., explained research conducted at UNC to the American Society of Clinical Investigation; Dr. E. K. M. Smith, a Fellow in the Department of Medicine, outlined a research project to the American Federation of Clinical Research; and Dr. Louis G. Welt, chairman of the Department of Medicine, spoke on "Membrane Defect: The Sick Cell" to the Association of American Physicians. His research is seeking to explain things that happen to the lining of a cell in sick people.

* * *

Quality food service in hospitals, nursing homes, and child-care institutions was the theme of the 15th annual N. C. Hospital Food Service Institute at UNC in early May.

The three-day institute was sponsored by the N. C. State Board of Health, the N. C. Hospital Association and the N. C. Dietetic Association.

* * *

Dr. Louis G. Welt, chairman of the Department of Medicine, was tapped for membership in the Order of the Golden Fleece, UNC's highest men's honorary society and the second oldest honorary society in the United States.

* * *

Surgery to unplug the major arteries in the neck which feed blood to the head seems to have a beneficial effect on some of the mental abilities of patients with blood-vessel disease.

Dr. Robert B. Duke, a psychologist at the UNC School of Medicine, reported at the annual meeting of the Southeastern Psychological Association in Atlanta that his study indicated that vascular surgery is effective for skills measured by the Wechsler Adult Intelligence Scale (WAIS).

Psychological tests are being used increasingly to identify brain damage and to help locate and understand brain injuries. However, Dr. Duke's study is one of the few focused on evaluating surgery affecting the brain.

* * *

Scientific demonstrations and a discussion of careers in medicine were featured at the annual Open House for advanced premedical students at the UNC School of Medicine in mid-April.

About 100 students from eight North Carolina colleges and universities spent a half day with faculty advisors

and medical faculty members learning more about careers in medicine.

* * *

Miss Virginia Rigsbee, chief clinical social worker at N. C. Memorial Hospital, represented the Eastern North Carolina Chapter of the National Association of Social Workers at the biannual meeting of NASW's Delegate Assembly in Detroit, Mich.

She was one of four delegates from North Carolina to attend the meeting on April 9-13. The Delegate Assembly is NASW's policy-making organization.

* * *

A 34-year-old UNC surgeon was one of 25 young medical scientists in the U. S. and Canada appointed Markle Scholars in Academic Medicine by the John and Mary R. Markle Foundation of New York City.

Dr. Benson R. Wilcox, a native of Charlotte, has become the 12th Markle Scholar at the School of Medicine. He is an assistant professor in the departments of surgery and medicine and has been on the medical faculty here since 1964.

The medical school at which each of the Markle Scholars is a faculty member will receive \$30,000 over the next five years to supplement the salary, aid research or otherwise assist in the development of the Scholar as a teacher or investigator.

* * *

Some of the latest surgical techniques for returning patients with damaged and severely mutilated hands to productive jobs were discussed at a five-day hand rehabilitation course at UNC.

About 50 physicians and occupational and physical therapists from throughout the U. S., participated in a hand rehabilitation course held at the University of North Carolina School of Medicine and the Hand Rehabilitation Center in April.

NEWS NOTES FROM THE BOWMAN GRAY SCHOOL OF MEDICINE OF WAKE FOREST UNIVERSITY

Six associate professors at the Bowman Gray School of Medicine will be promoted to the rank of full professor, effective July 1. They are Dr. John R. Ausband, otolaryngology; Dr. Robert W. Cowgill, biochemistry; Dr. Harold O. Goodman, medical genetics; Dr. Felda Hightower, surgery; Dr. Charles M. Howell Jr., medicine (dermatology and allergy); and Dr. Hugh B. Lofland Jr., pathology (biochemistry).

Promotions for 27 members of the medical school faculty were approved at the quarterly meeting of the trustees of Wake Forest College. Promoted to the rank of associate professor were Dr. John A. Gergen, physiology; Dr. Frank C. Greiss Jr., obstetrics and gynecology; Dr. Ivan L. Holleman Jr., pathology; Dr. Henry S. Miller Jr., medicine; Dr. Thomas F. O'Brien Jr., medicine; Dr. Richard B. Patterson, pediatrics; and Dr. Donald J. Pizzarello, radiology (radiation biology).

Promoted to assistant professors were Dr. Robert F. Bond, physiology; Dr. Fleetus L. Gobble Jr., obstetrics

and gynecology; Dr. Richard Janeway, neurology; Dr. Noel D. M. Lehner, laboratory animal medicine; Dr. C. Douglas Maynard, radiology; Dr. William G. Montgomery, urology; Dr. William S. Pearson, psychiatry; Dr. John M. Pixley, psychiatry; and Richard L. Witcofski, radiology (radiological physics).

Members of the part-time clinical faculty of the Department of Obstetrics and Gynecology who received promotions were Dr. Carlton N. Adams, to associate professor; Dr. Mary I. Griffith, to assistant professor; Dr. Thomas A. Petty, to assistant professor; and Dr. Roscoe L. Wall Jr., to assistant professor. Dr. Benjamin F. Huntley was promoted to assistant professor of clinical medicine.

* * *

Dr. Eben Alexander Jr., professor and director of the Section on Neurosurgery, recently completed his term as president of the Harvey Cushing Society. His presidential address, "Perspectives in Neurosurgery," which he delivered at the annual meeting of the society in San Francisco, Calif., dealt with goals and problems of medicine in general, neurosurgery in particular, in a rapidly changing society.

* * *

Dr. Sushil S. Lacy, resident in urology at the Bowman Gray School of Medicine and North Carolina Baptist Hospital, is the recipient of a first-place award for an exhibit he presented at the annual meeting of the Southeastern Section, American Urological Association, in Hollywood Beach, Fla.

His exhibit on "Triple Contrast Vesical Arteriography" describes a new procedure designed to define more precisely the various stages of cancer of the urinary bladder. The technique was developed at the medical school by Dr. Lacy, under the guidance of the Dr. Clair E. Cox, assistant professor of urology, and Dr. William H. Boyce, professor of urology.

The exhibit was one of 30 in competition at the urological meeting. It was the second exhibit prepared at the Bowman Gray School of Medicine to win a national award this year. Dr. Margaret C. Conrad, assistant professor of physiology, won a first-place award in February for an exhibit on circulation, which she presented at the 16th annual scientific session of the American College of Cardiology.

* * *

Dr. I. Meschan, professor and chairman of the Department of Radiology, presented four lectures recently while serving as visiting professor at Montefiore Hospital and Medical Center in New York City. He spoke on "Quantification of Individual Renal Function by Radioisotopic Methods;" "Pathological Intracranial Calcification: Its Differential Diagnosis;" "Description of Abnormal Roentgen Signs Pertaining to Cerebrovascular Anatomy;" and "Atrophic Gastritis: Its Roentgen Diagnosis."

* * *

Dr. Richard L. Burt, professor and chairman of the Department of Obstetrics and Gynecology, has been appointed by the Executive Committee of the American College of Obstetricians and Gynecologists to represent

removes the mental blur



that clouds vision

SOLFOTON®

Each tablet or capsule contains

PHENOBARBITAL 16 mg.

(Warning: may be habit forming)

BENSULFOID® (See P.D.R.) 65 mg.

Precaution: same as 16 mg. of phenobarbital



Constructive Therapy

A Solfoton tablet or capsule at 6 hour intervals maintains sedation at the threshold of calmness, sustaining a mental climate for purposeful living.

Literature and clinical samples sent upon request.

FEDERAL LAW PROHIBITS DISPENSING
WITHOUT PRESCRIPTION

— AVAILABLE —

Solfoton (yellow, uncoated tablets "P")
100s, 500s, 5000s

Solfoton Capsules (yellow and brown)
100s, 500s, 1000s

Solfoton S/C (sugar-coated beige tablets)
100s, 500s, 4000s

W.M. P. POYTHRESS & CO., INC.
RICHMOND, VIRGINIA 23217

Manufacturers of ethical pharmaceuticals since 1856

the Society for Gynecologic Investigation on the Council on Resident Education in Obstetrics and Gynecology.

* * *

The Commonwealth Fund of New York City has extended its support of a research and training program in marital health, family life education, and human sexuality at the Bowman Gray School of Medicine.

Quigg J. Newton, president of the fund, announced that an additional \$121,000 has been appropriated for the program which is conducted by the medical school's Behavioral Sciences Center.

The Commonwealth Fund awarded a \$180,600 grant to the medical school in 1965 to support the program for a three-year period. The new grant extends the support through 1970.

The program is designed to train medical students, graduate students, physicians, and non-medical educators to deal with marital and family life problems. It also includes the development of training materials and the production of well-trained personnel for instructional programs at levels ranging from secondary schools to medical schools.

* * *

Dr. John T. Hayes, professor of orthopedics, was recently appointed to a committee post by the American Academy of Orthopedic Surgeons. He will serve on the Sub-Committee on Graduate Education which deals primarily with residency training programs.

* * *

Dr. Felda Hightower, associate professor of surgery, was elected vice president of the Southeastern Surgical Congress at a recent meeting of the organization in Bal Harbour, Fla. He is the immediate past president of the North Carolina Chapter of the American College of Surgeons.

* * *

Dr. Howard H. Bradshaw, professor and chairman of the Department of Surgery, and Dr. Eben Alexander Jr., professor of neurosurgery, were honored recently by their former residents at separate dinner parties.

Dr. Bradshaw was honored on his 25th anniversary as chairman of the department. A portrait of Dr. Bradshaw was presented to him at the dinner, which was held in conjunction with the annual meeting of the North Carolina Chapter, American College of Surgeons.

Dr. Alexander was honored at a dinner held during the annual meeting of the Harvey Cushing Society in San Francisco, Calif.

Twelve papers and one exhibit prepared at the Bowman Gray School of Medicine were presented at the 51st annual meeting of the Federation of American Societies for Experimental Biology, April 17-21 in Chicago, Ill.

* * *

Dr. Richard L. Burt, professor and chairman of the Department of Obstetrics and Gynecology, participated in a recent symposium on Medical Complications of Pregnancy in Philadelphia, Pa. The symposium was presented by Jefferson Medical College and Pennsylvania State University.

Dr. Frank C. Greiss Jr., assistant professor of obstetrics and gynecology, participated in a colloquy on Reproductive Physiology and gave a luncheon conference on "Microcarcinoma of the Cervix" at the annual meeting of the American College of Obstetricians and Gynecologists in Washington, D. C.

* * *

Two members of the Bowman Gray faculty were speakers for a meeting of the Southeastern Psychiatric Association April 23-26 in Southern Pines. Dr. Richard C. Proctor, professor and chairman of the Department of Psychiatry, spoke on "Psychiatry for the Psychiatrists." He is secretary and a past president of the association. Dr. Clark E. Vincent, professor of sociology and director of the Behavioral Sciences Center, spoke on "Marital Health or Liaison Sociology."

NORTH CAROLINA MEDICAL PROGRAM

The North Carolina Medical Program, now in the planning stages, has added a new assistant with the appointment of John J. Hayes as director of the co-operating hospitals division.

The appointment was announced by Dr. Marc J. Musser, director of the statewide program being set up under U. S. Public Health Service assistance to combat heart disease, stroke and cancer, and related diseases. The North Carolina program operates out of Durham.

Hayes comes to North Carolina from Washington, D. C., where he was a hospital administration specialist for the department of medicine and surgery of the Veterans' Administration.

From 1962 until 1964, he was director of the department of medical services for the Government of Guam, and in this capacity he organized the health services and supporting training programs for that small nation.

As director of cooperating hospitals, Hayes will work with administrators and trustees of community hospitals, the North Carolina Hospital Association, and other state organizations and agencies in establishing cooperative arrangements, communications, and information systems. In addition, he will assist community hospitals in the development of educational programs and facilities for health manpower.

Besides his position with the Regional Medical Program, Hayes also will have appointments in the Graduate Program in Hospital Administration at Duke University and in the Department of Hospital Administration at the University of North Carolina School of Medicine.

Why do New Yorkers suffer eight times as many heart attacks as South Koreans? This is one example of thousands of relevant statistics being investigated by heart researchers throughout the country in the search for answers to heart disease, says the North Carolina Heart Association.

mudrane®

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS



Each tablet contains:

Potassium Iodide 195 mg.
Aminophylline 130 mg.
Phenobarbital, Caution: May be habit forming . . . 21 mg.
Ephedrine HCl 16 mg.

FEDERAL LAW PROHIBITS
DISPENSING WITHOUT PRESCRIPTION

Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

WM. P. POYTHRESS & CO., INC.
RICHMOND, VIRGINIA 23217

Manufacturers of ethical pharmaceuticals since 1856





When eating fads of teens or tots Lead to a sudden case of "trots"

Parepectolin for quick relief of acute diarrhea
... soothes colicky pain with paregoric*
... consolidates fluid stools with pectin
... adsorbs irritants with kaolin,
and protects intestinal mucosa

In children, Parepectolin may be used to control diarrhea promptly and prevent dehydration, until etiology has been determined. In some cases, Parepectolin may be all the therapy necessary.



Parepectolin®

Each fluid ounce of creamy white suspension contains:

*Paregoric (equivalent) (1.0 dram) 3.7 ml.
Contains opium ($\frac{1}{4}$ grain) 15 mg. per fluid ounce.

warning: may be habit forming

Pectin (2½ grains) 162 mg.
Kaolin (specially purified) (85 grains) 5.5 Gm.
(alcohol 0.69%)

Usual Children's Dose: One or two teaspoonfuls three times daily.



WILLIAM H. RORER, INC.
Fort Washington, Pa.

AMERICAN HOSPITAL ASSOCIATION

A sizable increase in payrolls pushed community hospital average expense per patient day to a high of \$53.63 in February, 1967, according to survey figures released recently in Hospital Indicators by the American Hospital Association.

A year earlier hospital expense per patient day totaled \$47.13, with \$28.57 of the total being payroll. In February 1967, payroll expense totaled \$33 per patient day, a 15 per cent increase in twelve months.

Hospital Indicators, published monthly in Hospitals, the Association's journal, is based on data from a scientific sample of 628 short-term community hospitals selected from a universe of 5684 hospitals registered by the AHA. The universe represents 79.6% of all registered hospitals and 91.9% of all admissions.

Earlier this year the AHA presented testimony before the House Ways and Means Committee which included a projection that hospital expense per patient day would increase to \$57.93 by September 30, 1967, and on the same date hospital payroll expense would total \$36.90 per patient day.

Full-time hospital personnel, according to Hospital Indicators, increased by 98,000 in the 12-month period, for a current total of 1,349,664. Part-time personnel increased from 299,018 in February 1966 to the present total of 348,996.

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Appointment of Dr. Norman H. Topping, president of the University of Southern California, as general chairman of the National Conference on Medical Costs, in Washington, D. C., June 27-28, has been announced by John W. Gardner, Secretary of Health, Education, and Welfare.

Dr. Topping is a physician with an extensive background in the field of medicine, including service as assistant surgeon general of the U. S. Public Health Service and associate director of the National Institutes of Health.

The Conference was called by Secretary Gardner in response to President Johnson's directive of February 28 "to bring together leaders of the medical community and members of the public to discuss how we can lower the costs of medical services without impairing quality."

"The problem of rising medical care prices cannot be solved by Federal action alone," Secretary Gardner said. "we must have the help of the medical community, state and local governments, the insurance industry, and consumer groups to meet the problem."

Among members of the conference advisory committee are Ray E. Brown, director, graduate program in hospital administrative administration, Duke University Medical Center, Durham; and Dr. George P. Hager, dean, College of Pharmacy, University of North Carolina, Chapel Hill.

The Month in Washington

The American Medical Association has proposed that Congress set up a National Commission on Health Resources and Medical Manpower with broad powers to supervise the drafting of physicians for military service.

The AMA recommendation was presented by Dr. Albert H. Schwichtenberg, chairman of the AMA Council on National Security, at a Senate Armed Services Committee hearing on S 1432 which would provide for a four-year extension of the present draft law expiring June 30.

Other AMA recommendations for modification of the doctor draft program included:

—Expansion of the physician draft pool to include women doctors.

—Making subject to draft call foreign physicians under 35 years of age, with permanent visas or who have subsequently become citizens, and who may not be subject to call because they were not deferred from induction while under age 26.

—Limiting credit for fulfillment of the draft obligation to only service performed in the armed services. (Under the old law, service in the Public Health Service could satisfy a physician's obligation for active military duty.)

—Routine transfer, upon completion of an internship, of the jurisdiction of physicians to the local draft board serving the area in which the physician is engaged in training or practice.

—Changes in the pay and promotion policies for military physicians designed to increase the retention of career military physicians.

"Our primary recommendation . . . is the creation of a National Commission on Health Resources and Medical Manpower," Dr. Schwichtenberg said. "This Commission would replace and be responsible for the functions of the present National Advisory Committee and the Health Resources Advisory Committee. This new Commission, under the direction of the President, would have the responsibility of maintaining a

proper balance of health personnel, within existing resources, among the Armed Forces, other Government agencies, and the civilian population. Requests of the Secretary of Defense for health manpower in the military would be reviewed and approved by the Commission. The Commission would establish for the Selective Service System criteria for classifying, reclassifying and determining the order of selection for health personnel. Under this proposal, the present State Advisory Committees would be redesignated as State Health Manpower Committees, whose activities would be coordinated by the National Commission. It is further recommended that the Commission should be constituted from among persons of outstanding national reputation in the health-care fields, and its composition should include substantial representation from physicians in private practice."

* * *

The National Highway Agency announced tentative standards for emergency medical

Compliments of

Wachtel's, Inc.



Surgical Supplies



15 Victoria Road

P. O. Box 1716 Telephone AL 3-7616

ASHEVILLE, North Carolina

services provided for persons injured in traffic accidents.

The federal standards give the states broad authority in implementation and also are subject to comment by the states before they become final. The state programs must be in full operation before Jan. 1, 1969, or a state could lose up to 10% of its allotted federal highway construction funds.

Although the federal standards apply only to traffic accidents, they are expected necessarily to set a pattern for emergency medical services generally.

Dr. William Haddon, Jr., head of the National Highway Safety Agency, said the emergency care regulations are designed to provide quick response to accidents, sustain and prolong life through proper first aid measures, reduce the likelihood of permanent disability and prolonged hospitalization, and provide speedy transportation of accident victims to hospitals.

Excessive speed is the number one highway killer, according to a report from The Travelers Insurance Companies. Last year excessive speed was involved in more than 18,000 fatalities on America's highways.

Classified Advertisements

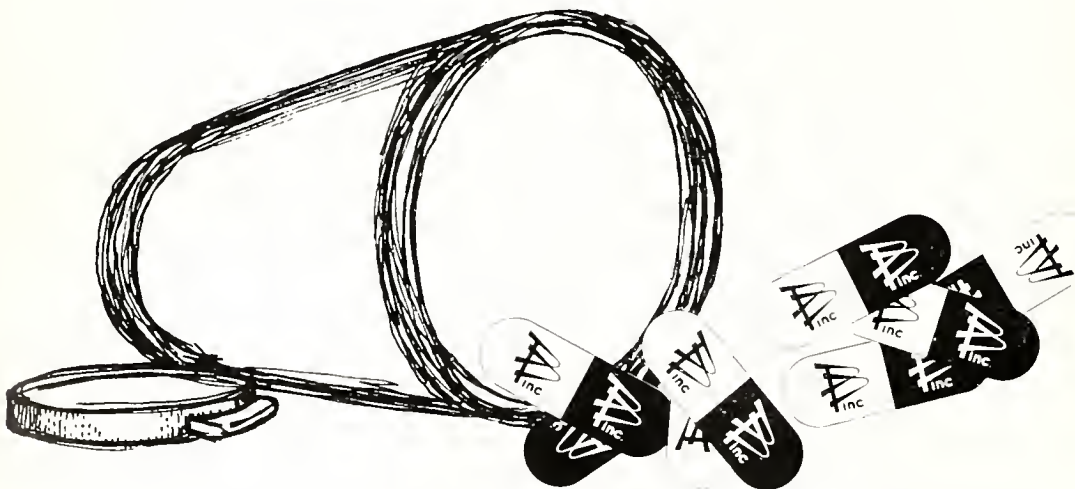
Doctor's office available for lease in Durham, N. C. Attractive waiting room, secretary's office, doctor's office, two examining rooms, small lab in a recently built building. Write Box 790, Raleigh, N. C. or phone Durham 489-2786. **AMJ**

WANTED—GP's to work as staff physicians. Contact Superintendent, Dorothea Dix Hospital, Raleigh, North Carolina. **AMJ**

"Medical Director wanted for Health Department in beautiful Western Piedmont County. Modern Department, top salary and fringe benefits." Reply Box 790, Raleigh, N. C. **MJ**

General Surgeon-Coastal North Carolina for group association with three GP's and 1 internist: JCAH approved hospital in town of 5000, referral area over 30,000; remuneration negotiable. Contact Richard Hardin, M.D., Edenton, North Carolina. 46-21-22.

For sale at a very reduced price. One Picker X-ray Machine, combination Fluoroscope, and X-ray, with Table and full equipment. Also, one, Liebel-Florsheim, Model SW 227 Diathermy machine, both machines are in good condition and can be seen any time in my office in Marshall, N. C. My reason for this sale, is that I am no longer able to use them and would like to dispose of them at once. Signed, W. A. Sams, M.D., P. O. Box 335, Marshall, N. C. Telephone, Office 649-3391, Residence, 649-2661.



WHERE QUALITY COMES FIRST
burlington pharmacal, inc. p.o. drawer 3311
burlington, north carolina 27215

